THE BRICKBUILDER

VOLUME XXIII — NUMBER 9

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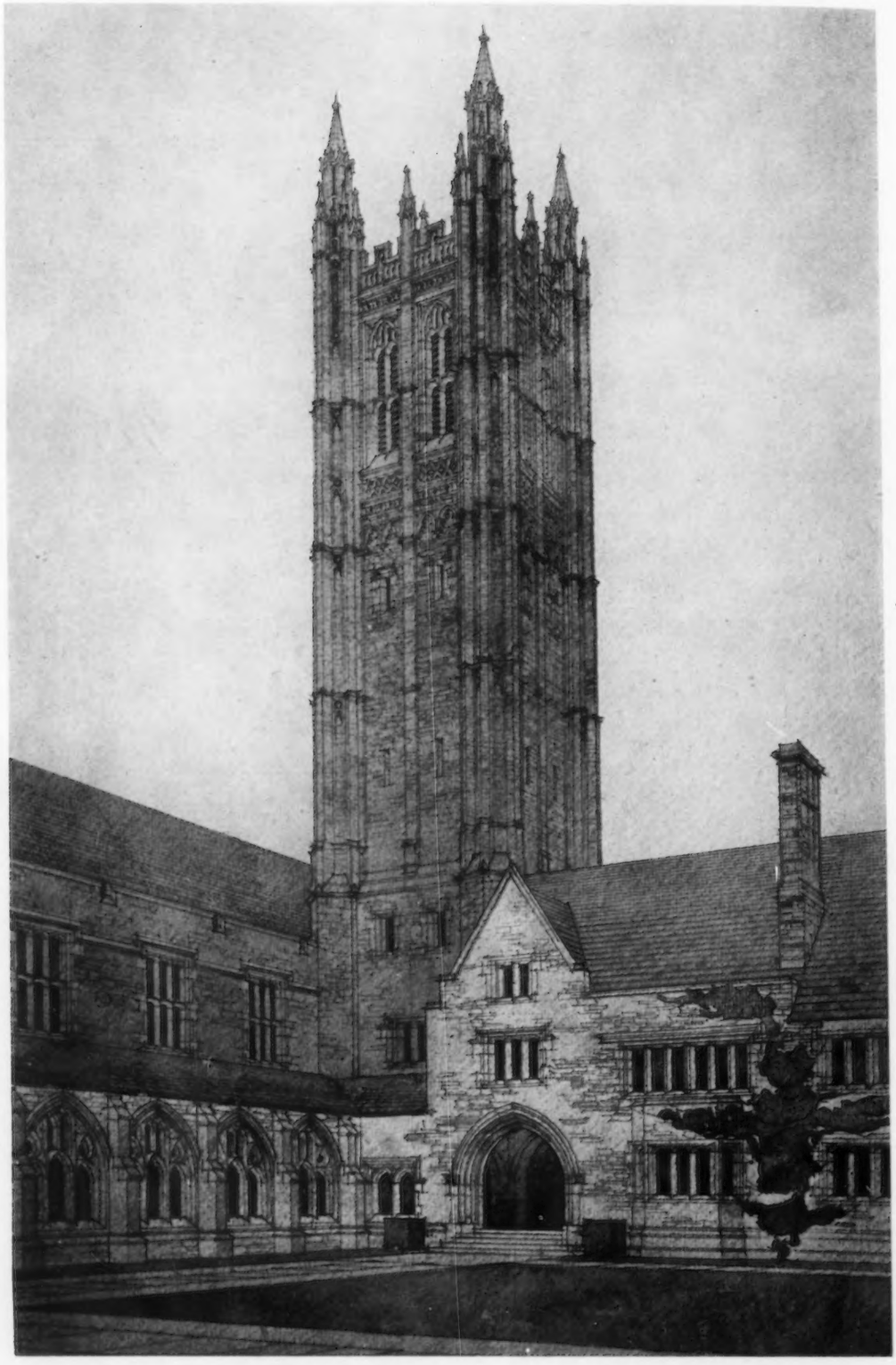

WATER COLOR DRAWING OF HOLDER TOWER
DORMITORY GROUP, PRINCETON UNIVERSITY, PRINCETON, N. J.
DAY & KLAUDER, ARCHITECTS
CHARLES Z. KLAUDER, DELINEATOR

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THE BRICKBVILDER
VOLUME XXIII SEPTEMBER, 1914 NUMBER 9

The Architecture of the Modern German Department Store.

By WILLIAM L. MOWLL.

Accompanied by Illustrations Reprinted from "Moderne Bauformen."

IN Germany, as in this country, there has been a great development of the department store business. The architects of Germany have seized upon this problem which presents many points of difference from problems of the past and characteristics which differentiate it from other commercial buildings of the present; and all the more eagerly as there has developed in Germany a national school of architecture, not less typical or less patriotically regarded than many of their other institutions, for which this problem gives an especially good opportunity.

The large retail merchants of Germany evidently believe in the value of fine commercial buildings. The larger stores are carefully designed and built of good materials. Space is given to features which are crowded out of our stores by the pressure of land value, and money is lavished upon features that are regarded as extravagance in all but the most exclusive of our stores.

Central Light Court, Wertheim Store, Leipziger Strasse, Berlin
Prof. Alfred Messel, Architect

German architecture might be expected to be logical, as the achievements of this nation are rather in science than in art. As a basis for judgment, the requirements of the American department store may be used, as in general the conduct of this business is not widely different on the continent from the methods in use in this country. Selling space, display space, light, and circulation are primary considerations. To gain the first, the American architect builds to the lot line everywhere, as far down as engineering can reasonably do, and as high as the building law will permit. Entrance features are made of marquises which cover the sidewalks, and side streets are boldly preempted for shipping facilities. The show window is exaggerated to the extinction of piers, until the building apparently rests on glass. To gain light, the basement is carried out under the sidewalks, and the piers above the show windows are made as thin as possible in steel and terra cotta. The passage of customers through the plan is facilitated by the aisle systems and by many elevators. On the other hand, that clearness of planning which guides the visitor to the various parts of the composition by the greater and less emphasis placed upon parts of varying importance is mostly omitted, and the stranger left to the guidance of the floor walker; and that distinction of design that attracts every good instinct is generally passed over as unnecessary expense.

In American stores, great halls, extending through several or all of the stories, have sometimes been made features of the plan; but this idea, borrowed from the continent, has not come into general use. In Germany it is evidently an essential. It may exist to centralize the plan or to illuminate it. In the first case, it serves, in the vast maze of people and goods, as a point of orientation, which not only opens up a general view of a very considerable portion of the departments in the store, but also reveals the stairs and elevators by which they may be reached. This is a decidedly practical function. The large and attractive space is not sacrificed, but serves as a guide, and brings about free and rapid movement of customers. As a means of lighting, it is apparently considered equally indispensable.

That these courts are in general use in Germany, points to a number of conditions which are different from those in this country. Even in the larger cities the ceiling lights of these halls are not more than five stories above the floor, although roofs may rise around them to the height of two or three stories more. Concentration of business is less, for not only are the buildings low, but the building owners are willing to take space for out-of-door courts, as well as for these light courts, both within the building and also facing back streets for service purposes. Given the American conditions of greater business congestion, not only does a light court in a ten-story building take twice as much space as in a five-story building, but the possible angle at which the light may enter becomes such that the lower stories are little benefited; and further, where a hall five stories high presents a comprehensible number of divisions, in ten stories a view of the whole would only add to its incom-

prehensibility. Apparently in German conditions these halls, in general, answer every requirement of good design. In detail, however, they seem not to be quite as reasonable. Either for view or light, the piers surrounding them should either be narrow or should, at all events, present their narrower faces toward the light. This would be logical, but it is not done.

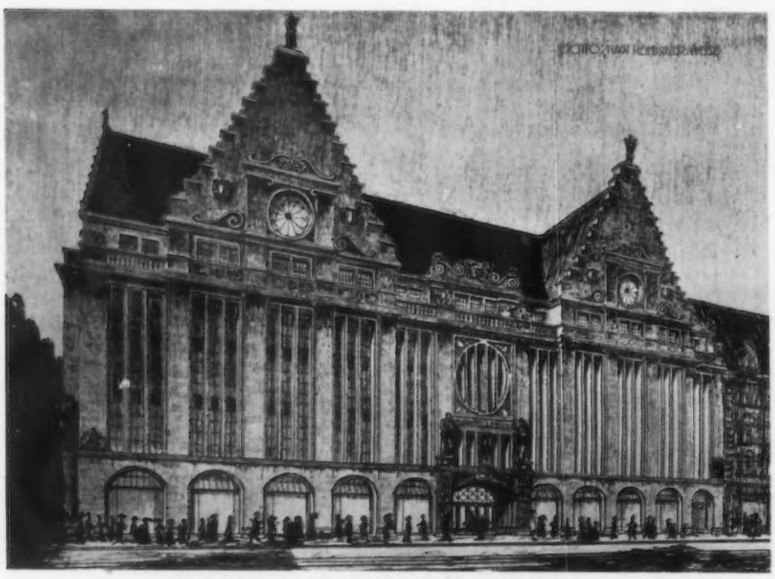
The façade has for possible motives either the singleness of the whole enterprise, or the existence of the great halls inside. Both are large, simple ideas and neither contains any suggestion of variety or of lack of continuity. If the motive of the hall is light let into the plan, then the façade must express the same thing; many and large openings are to be expected. In general, there is as much necessity for light on one story as another, with the possible exception of the first, where the whole area of glass is never considered by the owner to be too much.

Singularly, this is not what actually happens. In no case is the façade treated as a unit. Arbitrary divisions occur at most unexpected levels, and the divisions are most unrhythmical. These façades seem to stop as they do chiefly because they continue no further. The façades of classical antiquity started with a strong, vertical movement at the base, and by a subtle arrangement of details came to rest above on horizontal lines; Gothic architecture starts with moderate movement at the base and accelerates constantly to a climax, and many façades of the Renaissance, through stories of graded and alternated height and interest, follow this latter scheme, apparently to satisfy a fundamental craving of the eye. Some such rhythmical scheme must underlie the arrangement of the vertical order of every architectural design. Rhythm is replaced by abruptness in much German general design and detail.

Every department store façade is crowned with a roof, never less than two stories in height, sometimes much more, commonly not well enough lighted to permit of the use of the space within, although provided with dormers

The "Agrippinahaus," Cologne
Georg Falck, Architect

of all types, gables, and turrets. A roof that shows is one of the most unnecessary features of any building from the point of view of structure. When it shows, it takes a part in the general movement of the structure, generally a very important one. The steep roofs of Gothic architecture were not necessary for any climatic reasons; the aisles of Notre Dame are flat roofed. Then, since any but a flat roof exists only to be seen, if it cannot usually be seen, it is architecturally unreasonable. On a city street, we consider it entirely impracticable on account of ice and snow. A great difficulty of these designs is the total lack of transition between the scheme of the walls and that of the roof. These general considerations are illustrated by the buildings illustrated herewith.



Design for a Department Store Building at Nuremberg
Prof. Ludwig Ruff, Architect

In the "Agrippinahaus," Cologne, by Georg Falck, the show windows are well separated by piers. It would appear that the best opinion on the part of window dressers as well as architects is that each show window exhibit should be a unit, and that no sacrifice is made of the continuity or, consequently, of the horizontal unity of the façade by frankly carrying the piers down. In part with the picturesque influence felt in all of these buildings is the projection of the third story of this

Rug Department in the Althoff Store, Dusseldorf
Wilhelm Kreis, Architect

façade and the iron balcony at the fourth floor. The piers in the windows are too wide and too deep for adequate lighting. Such carving as the building has is modeled in a manner somewhat more than merely vigorous. Contrasted with the delicate elliptical sections of Greek sculpture, it has sections which are not only fuller and rounder, as in Roman or Romanesque work, but this effect is exaggerated by starting the section out perpendicular to the plan of the back surface and flattening the highest parts; this is dwelt upon in this connection because it is typical.

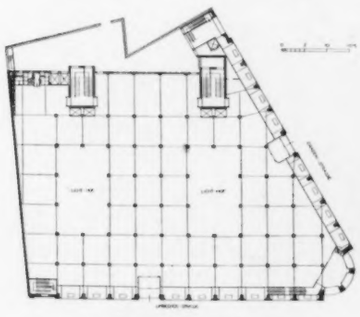
In this building the scheme of the first two stories is fine; the next story and its balcony fairly complete the movement of the whole, which then continues. Another view of this same building shows the roof brought down to the top of the fourth story, with gables. As a picturesque arrangement, this is more successful than the front.

A sketch for a store in Nuremberg shows a building about six stories high, with a tremendous development of roof, equal to more than three stories of the building, with stepped fantastic gables pierced with great circular windows.

The Althoff store in Dusseldorf is not in the sort of location that would be chosen by the American department store manager, who seeks the most crowded districts without open spaces to interrupt the streams of traffic. Its five stories are crowned by the inevitable heavy roof, which should justify itself by being attractive. The alternation and balance of the varied bays of this front are vigorous enough to determine the symmetry of a façade of three times its length. The Ionic cap above the openings is amusing. An Ionic cap is only a bait to the eye to lead it up the flutes of the column and so produce a sense of vertical movement. Wishing to produce a sense of vertical movement in a wall with openings, this feature may be used over the window openings as well as over the piers; and just to show that the Ionic cap form has nothing special to do with it, it is alternated with another device in the bays of the side elevation. There is no harmony in the movement of the various parts of these façades. The walls rise and crash into the cornice, and the clumsy device over the central door threatens to fall. The large room of the rug department in this store is high and well proportioned, simply paneled, and admirably free from cash railways, sprinklers, wires, drain pipes, heating pipes, signs, water pipes, and so on.

The plan is an arrangement of structural bays about 17½ feet each way. The light courts occupy nearly one-fifth of the plan. One of these courts is, curiously, only one bay back from the street.

The plan of the Wertheim store on Konig Strasse, by Ernst Rentsch, is the truest to type of those at hand.



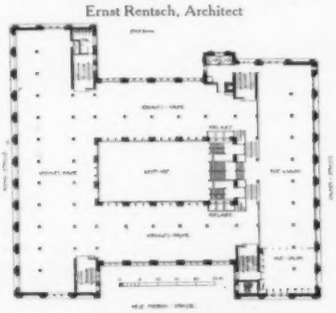
Ground Floor Plan
Althoff Department Store, Dusseldorf

Althoff Department Store Building, Dusseldorf
Wilhelm Kreis, Architect

The entrance is on the axis of the court, the court leads to the principal communications. The heavy piers and other architectural features of Renaissance suggestion are not better than if more closely stylistic. A set back from the lot line is hardly explainable as for purposes of obtaining more light, as two projecting pavilions have blank walls. The design of main cornice and attic is worthy of some study. The vertical movement due to these attractions is taken up, and a conclusion provided at the top by the multiplicity of parts made up of the breaks in the cornice, the consoles, and the breaks in the cap of the attic. A considerable portion of this store — the grocery and dairy products departments — is very carefully done in glazed terra cotta.

Central Light Court, Wertheim Store Building, König Strasse, Berlin
Ernst Rentsch, Architect

The store of the Tietz concern, in Dusseldorf, is a very ambitious design in rough pointed stone. The interesting pier design demands no less space than the engaged column scheme. It must be fully five feet from the outside of the piers at the base to the inside of the wall at the top. The windows are reduced to slits, and the spandrels darkened to get an effect of verticality. It is interesting to see the use here of the dark railings above as arrests to the vertical movement of the piers. The garland feature of this cornice is typical of the introduction of ornament without harmonizing features on broad, flat, and frequently rough surfaces. The sculpture spotted on this façade is as queer as *Art Nouveau*, and further proves that the rhythm of previous forms of art can as successfully be produced in forms entirely different.



Ground Floor Plan
Wertheim Store, König Strasse, Berlin

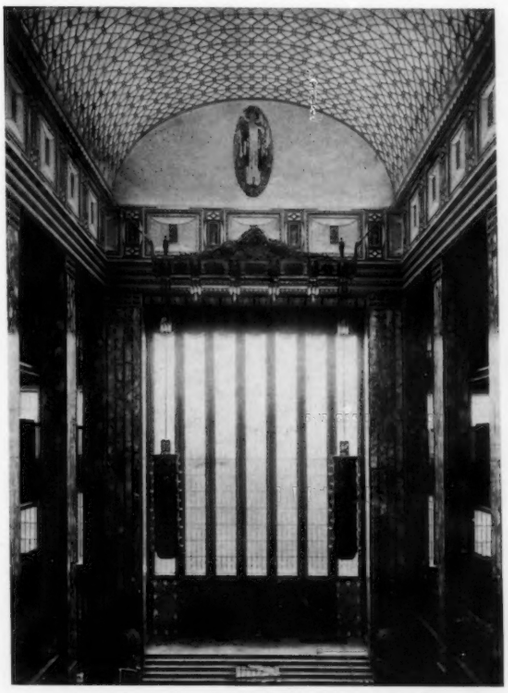
The light court has extremely interesting marble cased piers and a fine great window and glass ceiling. It seems rather curious that a light court should have a window ; or is the difficulty that it is so hard to realize that there should be a department store owner altruistic enough to want a fine, great room in his store just because it is fine?

The very most interesting example is another Wertheim store in Berlin. Although the plan covers an immense area, the total height is only six stories. There are an amazing number of light courts, some glazed over and some open. The general arrangement suggests that the building is, like so many of our store buildings, a growth, one building after another having been added. Stairs and elevators are grouped near the light courts where they are conspicuous from many points in the plan. The largest of these light courts is surrounded by great piers five stories in height, connected by arches at the top, the whole surmounted by a tremendous ceiling light. At the level of the ceiling of the fifth floor two great elliptical arches or bridges cross the room, the whole illuminated at night by festoons of incandescent lamps, and by other large and elaborately designed lighting fixtures. A great recessed vestibule at the corner of Leipziger Strasse and Leipziger Platz, with a very large hall above it, serves as an announcement of the whole establishment on this side toward the more important approach. It should be noted that even in this location a considerable space has been set off at the back on Voss Strasse, evidently as a shipping space, so that the traffic of this store does not interfere with that on the street. The building, as seen from Leipziger Platz, is a very wonderful conception. It cannot be said to be in any style from an archeological point of view, but it certainly has style. The varying treatment of space above the arches, the fine sculpture, free in treatment and very finely placed, the wonderfully assumed *naivete* of the smaller carving, and the rough blocks which are distributed about above on the piers, are all worthy of careful study. If it is possible to reproduce the charms of Lombard Romanesque work, it has certainly been done here, although without in the least closely following that style. The very narrow windows above the arches, with small elliptical features at the tops, which open into a great hall, together with the treatment of the piers, supports for the figures at the imposts of the arches — all work up an astonishing vertical movement which is, however, very rudely terminated by the roof, which hardly avoids the appearance of being temporary.

In architectural criticism, the points which are first seen by an observer are those least likely to be indicative of fundamental quality. Criticism is usually prejudiced because the critic cannot escape from tradition, whether it be that of yesterday or of some more remote time. It is much more difficult to pass upon the scheme of a design than upon the forms in which it is clothed. It is useful here to insist upon the principles which have entered into the criticisms preceding.

With respect to plan, all plans are roughly divisible into two general classes which may, for convenience, be

termed private and public. The latter of these two types is usually termed monumental. The first type of plan is that which is from the nature of the program destined for the use of those familiar with its use or for those who will use it under guidance. Such plans will always be found to contain vestibules and reception rooms to detain the stranger. They are deficient in symmetry. Symmetry in architectural composition is only necessary, in groups of features, as a guide to what lies beyond them. The axis of the symmetry, in large composition, is the line along which it is desired that the greater number of visitors to the plan shall proceed, and lesser axes in like proportion. As there is little motive for symmetry in plans of the familiar type, those are most successful which are arranged on free lines. Further, the most important spaces in an intimate plan are precisely those which must be reached last; and the route to them is no less good if it is devious, if it remains convenient to those who use it. The dominant features of such plans are usually placed with reference to exposure and lighting rather than from considerations of exterior appearance. In the public type of plan, on the other hand, exposure and lighting become entirely secondary to the first consideration of communication. The principal features of the scheme must announce themselves from the principal view points on the exterior, and from as many others as possible. In the plan, it is essential to introduce features not to be formed at all in the private plan. Conspicuous centers or foci must be established in number equal to the groups of parts of principal importance. The purpose of these is, first, to attract those entering the plan, and then to present clearly, and in the order of their importance, the parts accessible from this focus or the avenues by which they may be reached. This arrangement is indispensable in any building intended for use by large numbers of people; and the use of foci is still advantageous when the parts to be reached are merely subdivisions of the surrounding space, as in the case of the departments of a big store.



Central Light Court, Tietz Department Store Building, Dusseldorf
Prof. Josef Olbrich, Architect

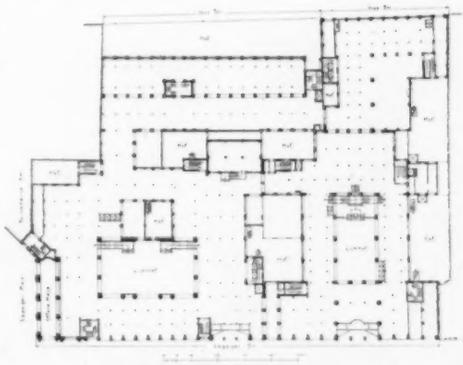
The plan of a department store does not help the designer of the façade very much. The designer of the Wertheim store was fortunate in having a great hall to put on the most conspicuous corner, or else he was genius enough to induce the owners to permit him to create it for that purpose. In general, however, architects who have sought novelty in these façades have resisted the frank solution of the problem in the same way as have most other modern architects. The building is a unit from the ground to the roof, divided into nearly equal vertical spaces. The designers of classical antiquity got along very nicely with a single vertical division of building. The architects of the Renaissance were obliged to admit horizontal divisions, and invented rhythmical arrangements to join them all together. Besides these precedents the German designer is affected by the varied and picturesque arrangements of his own more immediately traditional types. Few designers can escape from traditional forms. It is a delightful academic exercise to theorize about the relationships of the forms of this art; but the conditions under which it is practised call for expedition, and invention is slow and uncertain. Still, when a group of designers commit themselves to a

Tietz Department Store Building, Dusseldorf
Prof. Josef Olbrich, Architect

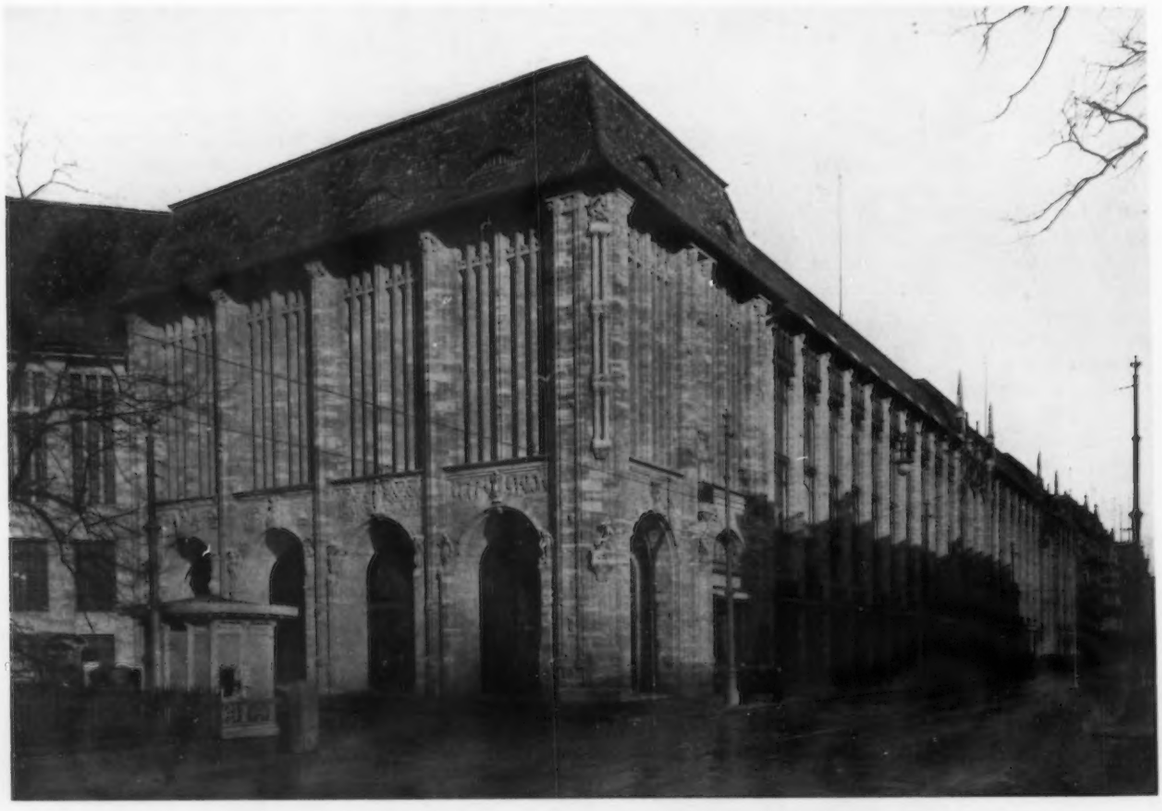
movement to create something new, why is it that they refuse to see that the new creation already exists when their plan and construction are complete? They not only do not see this, but cloak the new grouping of forms in a badly fitting old garment. If the main lines were new, and the detail remained classic, or what you please, the result would be new, as witness the difference between Classic and Renaissance architecture. The best parts of these store buildings are those isolated sections where the piling of one story on another, supported by equal piers, equally shaped, is frankly recognized.

In the detail, some of the designers have caught the meaning of traditional forms. This is shown by their accurate placing and spacing of ornament, especially sculpture.

Although the general tone of the foregoing criticisms seems unfavorable, it is certainly not their intention to withhold cordial approval from the results of all this work. In the first place, the attitude of the owners is fine. They have made great material sacrifices in order to secure well planned and otherwise architectural buildings for the conduct of their business. There is a unity in treatment which is, on the whole, superior to the defects of their detailed composition. There is here seen another undoubted manifestation of German nationalism. In the use of materials and the treatment of each, in the scale of these buildings, in their adherence, even on the most crowded of city property, to picturesque traditions, the architects have shown a new independence and an enterprise in art that is worthy of much praise. Architecture of this sort, in which the effort of the designer is still visible, is a much more fruitful field for study than more perfect architecture in which the effort is concealed in the perfection of the result.



Ground Floor Plan, Wertheim Store, Berlin



Wertheim Department Store Building, Leipsic Street, Berlin

Prof. Alfred Messel, Architect

The Survival of the Unfit.

By LOUIS LA BEAUME.

AS one long inured to the sin of plagiarism and not only hardened to the innate viciousness of its practice, but even influenced by many distinguished examples to regard it as a virtue, it is easy to appropriate as a subject for these notes a phrase already coined. Had it not been natural to follow the line of least resistance, it might have been possible to have invented a title somewhat more obviously expressive of the subject.

At a time when sociologists are discussing the duty of society toward the unfit who do survive in large numbers and the means by which those numbers may be reduced, when physical and political scientists are discarding old formulas, when the discoveries in every field of endeavor to-day are tending to repudiate the theories of yesterday, when the note of modernism is being sounded by leaders in the arts of literature, sculpture, painting, and drama, it is difficult to understand the acknowledged stagnation in the practice of architecture. Architecture as a living art has not kept pace in its development with the march of civilization, and the reproach under which it is fallen is distinctly traceable both to the attitude of the public and of the profession. Formerly the living and vital expression of customs, manners, and necessities, it has now become as a dead language in the mouth of pedantry. There are evidences in literature, music, play-writing, and sculpture that the trammels of tradition may be thrown off, and we have in these arts many achievements which reflect truly the aspects and impulses of contemporaneous life. However, with the rise of the comparatively modern science of archeology, the art of architecture has undoubtedly declined. It is pretty generally conceded to be a dead art and, strange as it may seem, its chief mourners resent violently while deploring its decease any effort to galvanize it back to life. This paradoxical phenomenon has manifested itself in the realm of other arts, sciences, and professions, but never with more stifling persistence and obstinacy. Its most respectable alias is Conservatism, and its most vaunted deity is Precedent. In the modern art of music, pioneers like Wagner have broken through the bonds of tradition, under protest it is true but with such success that the bizarre iconoclast of yesterday has become the commonplace fogie of to-day. Other men like Richard Strauss have taken up the threads where he laid them down and gone on with the result that music to-day occupies the place once held by architecture as the art most expressive of the emotions and aspirations of modern life. Similar progress has been made in the field of literature, and Ibsen has evolved a form of drama distinctly modern in both its theme and treatment.

In sculpture, men like Rodin have revolutionized the standards of taste so that the generation which came to scoff has stayed to pay him his due meed of praise as a master of modern thought expressing itself in modern technical methods. No longer is it popular in literature to imitate the models of the past nor to write after the manner of Homer, Dante, Chaucer, Milton, or Wordsworth. Likewise it would be considered an anachronism to paint in the style of Giotto or Botticelli as it would be to imitate the musical forms of the seventeenth and eighteenth centuries. It is just as great an anachronism to set up in our American parks imitations of the Parthenon or to transplant stone for stone, Venetian palaces, or François Premier chateaux to our busy metropolitan thoroughfares.

Historical investigation has revealed to us the antiquity of the art of building, and while it has instilled in us a veneration for the high water achievements of the past, its scientific method has also shown us that these achievements were no less the result of evolution than of inspiration. The Greek masterpieces of the time of Pericles were the culmination of centuries of tortuous and painstaking experience, labor, and struggle. Parthenons less perfect and temples cruder and yet more crude were fruits of the same strong branch which had its roots far back in the soil of Assyria, and finally blossomed with such glory on the Acropolis. The Romans came, saw, but were not quite conquered by the dazzling beauty of the art of Athens. They realized its perfection, but at the same time felt that that perfection was no less the result of its fitness in expressing the Greek civilization than of its inherent grace and simplicity. The principle of the column and lintel, the fundamental principle of Greek architecture, could be put to use at Rome; but the chaste austerity of their treatment would be out of harmony in a civilization whose keynote was exuberant splendor and the pomp which vigorous conquest made possible. So the Greek orders — the Doric, Ionic, and Corinthian — were appropriated by the Romans, but they were translated into the language of their new users. The Tuscan order was invented and then the Composite, to satisfy the Roman desire for ornate floridity. In this process the original Greek *motifs* lost much of their refinement, but gained in vigor, and were used in an infinite variety of ways without regard to precedent, and in combination with the arch and vault of Roman invention. The result was the living, vital architecture now become, along with that of the Greeks, what we call classic.

During the Dark Ages in which the Romanesque and Gothic styles flourished, all recollection of the classic architecture of Greece and Rome seems to have been lost. About the beginning of the fifteenth century the humanists of Italy began to turn their attention to the study of antiquity, to scan the models of Greek and Latin literature, to explore the recesses of the past, and to remould the arts of poetry, drama, sculpture, and architecture on the masterpieces of the ancients. This awakening of interest in older civilizations, this drawing of inspiration from them, became a mighty movement sweeping over all Europe, creating new enthusiasm in all the arts and sciences and revolutionizing thought and action so vehemently that it amounted practically to a rebirth of civilization, and as such it is known to this day, namely, the Renaissance. Interest in the past became a passion, and architects traveled to Rome to study the fragments of antiquity. The classic column and capital, the round arch, mouldings, and ornaments

were incorporated into buildings as Latin and Greek phrases were incorporated into the language. Buildings were not built in frank imitation of older ones, but older *motifs* were grafted on to current forms in such a way as to produce a new and distinguishable type. This style, hybrid though it was, had a myriad variations in Italy, France, Germany, Spain, and England, and survives after a fashion to this day.

Now men have said looking back on these periods of activity and invention that the gamut has been run. No further variety of design or composition is possible, and every conceivable combination of architectural forms has been accomplished. They have expressed greater or less admiration as their temperament, taste, or fashion impelled for the examples of particular styles, but the consensus of judgment seems to award the palm of perfection to the architecture of Greece, to maintain it as a standard of beauty, and to declare the Parthenon the noblest example of architecture in the world. The Gothic style has its partisans also, but they do not seem to be at the moment in the ascendency, although by dint of skilful practice it is unsafe to prophesy that they will not be to-morrow the heralds of the chosen style. Three decades ago the Romanesque party (in this country, at least) claimed all the honors, but with the death of its chief apostle Richardson, his rivals spread out a full line of samples in the correct cut of the Italian Renaissance.

For a century we have been helpless as the devotees of fashion awaiting the *pronunciamento* of some Redfern or Worth of architecture, and we have received their dictum with unprotesting docility. Here and there a heretic has risen up and proclaimed his conception of the truth only to be howled down as a dangerous innovator. The safe and sane are in the lead. We cannot presume to compete with the masters of the past. We must venerate them and, since imitation is the sincerest form of flattery, we must imitate them. In a democracy of taste it does not matter much which respectable cadaver we imitate, but he must be really dead. Since we cannot invent, we must plagiarize. It is after all but a conventional offense and harms no one. If a building is beautiful, why not repeat it, reproduce it instead of risking the perpetration of something for which there is not precedent and for which no past civilization stands sponsor?

This, then, is the condition of architecture to-day in this country, — a chaos in which whim, fancy, or the fashion of the hour dictates what model to follow, what master or school to plagiarize. As a result there is scarcely a building of note in the world of which several versions more or less grammatical do not exist. In New York alone, for instance, almost every Italian *palazzo* of importance, from the massive rusticated semi-fortress type of the Ricardi with its heavily barred windows, the stronghold of the Medici, to the light and fantastic Gothic and late Renaissance fabrics that front the Grand Canal, may be seen in duplicate. Buccaneers of the business world boast possession of faithful reproductions of the *chateaux* and castles of royalty. Marie Antoinette's Petit Trianon may be found literally scattered over the country; and Chenonceau, once the cause of so much bitterness between the neglected Catherine de Medicis and the pampered Diane de Poitiers, now stands on Riverside Drive. The examples might be multiplied *ad infinitum* of these architectural snares for archeologists to ponder in future years.

As a matter of fact, this catholicity of tastes is not strictly confined to our own cities, but of all peoples the French seem least open to criticism on this score. From the hour when France first began to feel the influence of the Renaissance, French architects have been alert to develop and freely use classic forms bequeathed to them, with the result that the social and political history of France may be clearly traced in her architectural monuments, one epoch succeeding another in natural sequence, and each bearing the distinct imprint of its time. Realizing that conditions change with the change of customs, and the introduction of new materials and methods of construction, the French architect seeks to meet these new conditions fairly.

The charge that all the changes have been rung is being continually disproved in France, and buildings are being erected every year, modern in their very essence and as original in their way as the Parthenon was in its way. Some of them may be said to be as perfect also. For it is not true to say that the Parthenon is the most perfect building in the world. There are a thousand most perfect buildings judged by the only standard it is possible to judge by, namely, their fitness for the functions they are designed to serve and their logical and truthful expression of those functions. There can be no abstract standard of beauty. No man can say that a Gothic cathedral or Chinese pagoda is more or less beautiful than a Greek temple.

The province and the aim of the architect of to-day should be to take the conditions as he finds them and create an architecture to fit them; not to distort and cramp them to fit the architecture of another day. Where new problems present themselves as in some of our commercial work, no precedent existing, we are forced to this procedure with the result that critics see in this sort about the only thing they can commend. With the introduction and larger use of burnt clay, concrete, iron, and glass, we shall be thrown more on our own resources, forced to invent more as it becomes less possible to plagiarize.

Meantime tentative efforts are being made in Europe and in this country to break away from the outworn traditions of the past, to invent new forms and new details. The effort known as *Art Nouveau* is not always crowned with success, but underneath it lies a healthy impulse which should tend to mitigate much of the scorn it meets.

It indicates a promising reaction against the banalities of repetition, especially the repetition of classic *motifs*, and if it does not point the only path to a real and living architecture, it will at least incite us to a fresher point of view. Moreover, it has preëmpted a name which it should be the aim of all contemporaneous art to deserve. The first question which the layman is apt to ask on being confronted by a newly erected building is, "Of what style is it?" The question is in itself a condemnation of our architectural condition. Not until the answer, "It is *Art Nouveau*," be possible will architecture have reached a development which will entitle it to stand with the other arts as an expression of the spirit of the times.

Do not understand me to imply that all precedent should be thrown to the winds. That would be like attempting to invent a new language. Rather let us sift the languages which we have inherited of such phrases and *motifs* as have outlived their usefulness and infuse into them such new terms as new conditions demand for their expression.

Miniatures and Their Value in Architectural Practice.

By BERTHOLD AUDSLEY.

MINIATURES of all styles of buildings and monuments in which ornamentation and figure-subjects are largely introduced, have been, and are being prepared to enable persons interested in their erection to properly judge of their appearance when executed. The everyday value of miniatures, built either in a temporary or a permanent nature, is not perhaps properly realized by the architectural profession. This lack of appreciation is much to be regretted, for if miniatures were more frequently made, there would be fewer mistakes made in proportions and grouping, and in the character and compiling of details. Perspectives may be more or less correct, but as a rule are misleading, especially when beautifully colored and enhanced by the addition of affected surroundings, which only exist in the artist's brain, and never can exist in the locality of the building when erected. Also other artistic properties, such as automobiles, street cars, and crowds of men and women, are introduced to make a taking picture. Such a picture is sometimes made to secure the approval of the design by the client, who is generally little versed in matters architectural, and who is, accordingly, unable to divest his eye of the glamour of the artist's cunning and come down to the proper criticism of the architect's design, even should the architect have been careful to show sufficient detail to enable any one to form a correct idea of what the building will look like. Then again a perspective shows a building from only one, usually the most favorable, point of view, and under such a condition displays two of its sides only. It is at the most an insufficient exponent, even if it is a fairly truthful one, of the architect's conception.

A miniature, on the other hand, if properly made to scale (scales ranging from 1 inch to the foot down to the minute scale of 32 feet to the inch) and carefully detailed in strict accordance with the architect's design, would make an honest statement of facts which cannot mislead any one, although he may be quite unskilled in architectural treatment. I mean when I say "carefully detailed" that all details such as all mouldings be shown in relief, windows pierced and glazed and sashes shown, doors built and paneled, chimneys carefully built and accurately placed, as well as all other details called for in the design, great care being taken to have all angles clean and sharp. From such a miniature the client can get a perfect idea of the building, whatever it is, which the architect proposes to erect for him, and approve or disapprove with perfect assurance and so avoid any ultimate disappointment. Another important factor is perhaps that it may show the architect, before it is too late to remedy it, any weakness which may show in the design, either in comparative proportions or in the grouping of parts when seen from all points of view. Should everything appear right, both the client and the architect can be absolutely sure the building will be a success so far as its external treatment is concerned. No such assurance can ever be positively arrived at from the inspection of a perspective or geometrical drawings.

There are different classes of miniatures which can be made to meet certain requirements, and which vary considerably in the labor necessary for their constructions, and also in the materials for the same. The most important of the classes can only be alluded to in this article with advantage, and that briefly, and cannot begin to give one any idea of the beauty of such miniatures executed as stated, whether it is an important interior built to the scale of 1 inch to the foot or a complete miniature of a village built to the minute scale of 32 feet to 1 inch.

The simplest class of work may be properly called "block miniatures," — scales 4 and 8 feet to 1 inch, — for this term conveys a correct idea of their simple treatment. In this case very little detail is shown,— only the main proportions of the building in correct proportion and position with respect to each other, dispensing with most of the details except the principal mouldings and cornices, etc. These are modeled correctly so as to get the proper projections,

Fig. I

Fig. II

Fig. III

Three Views of a Model of an English Country House and Tower

Fig. IV. Model of an English Country House and Estate

also having the walls pierced for all windows and doors to get the correct recessing, etc. A miniature constructed on these lines, bald though it may seem, is extremely valuable in enabling the architect to judge correctly how his design is going to work out; how the different elements will group, whether artistically or otherwise when viewed from all sides. Every experienced architect knows how very different such a feature as a tower, constructed with stages of varied forms, appears when drawn on paper and when built and seen from different points of view, and it can be safely surmised that numerous towers and spires would have assumed more artistic and pleasing proportions and treatment had they been tested by correctly made miniatures prior to construction. These miniatures are also valuable for other purposes, such as developing and critically examining complex and unusual roofing problems, whether architectural or engineering. The best and indeed the only materials necessary for the construction of this class is stout cardboard, accurately drawn and cut, and put together with a thick solution of gum arabic and painted in one color or several to represent the different materials to be used. It is very desirable that all students in the architectural schools all over the country should be taught architectural miniature work in its elementary stages at least, leaving them, should further tuition be impossible and having the inclination to carry the art of miniature making into its more advanced form, to work out the problems themselves, as it becomes a most fascinating and profitable hobby. Speaking from an experience of eighteen years in this direction, it would be impossible for a young architect to have a more instructive hobby, or one that would be better calculated to foster his interest in his profession.

It is necessary to enlarge somewhat on the great advantages of using cardboard as the chief material in the construction of architectural miniatures. It is superior to every other material when properly handled. It is more durable and trustworthy than either plaster or wood. It becomes impervious to moisture and changes of climate, impossible in wood for any length of time, even if you could work wood to such small detail. On the other hand, cardboard can be more accurately and sharply shaped to all the usual architectural details, which include complex mouldings and pierced tracery work, than either plaster or wood. The construction of cardboard miniatures involves no objectionable mess, such as is found in using plaster or wood. It requires no very complicated tools or instruments, outside the usual drawing instruments, a knife, a few punches, a cutting edge, a simple circular cutter, a few perfectly true lead weights of different sizes, several sheets of plate glass to use as pressure frames and

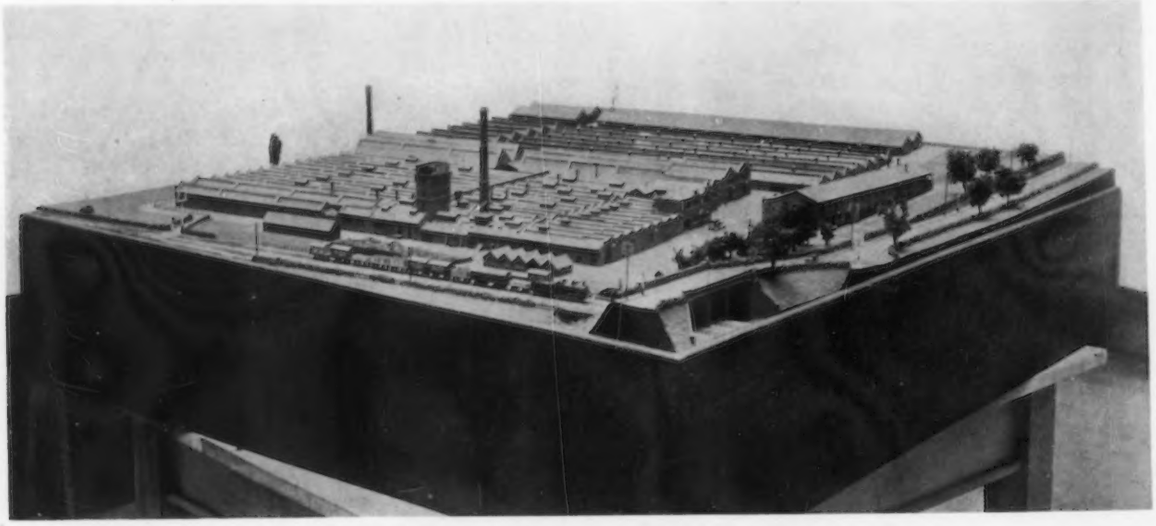


Fig. V. Model of a Manufacturing Plant at Birmingham, England

also to cut on — no other tools are necessary for any kind of miniature work ; but the chief tools will always be found to be the knife, cutting edge, and a sheet of plate glass. The cardboard must always be cut on plate glass, as this is the only material that will not turn the edge of the knife, if of good steel, of course. All the largest flat pieces, even the smaller ones, in fact, when gummed together, are best pressed between plate glass so as to give a uniform pressure all over. Of course the lead weights or even pieces of flat marble can be brought into play.

In many cases no other material but cardboard is used in any of the constructional work. Figures I, II, and III show examples of a half timbered house with prospect tower. Figures I and III show the tower from two views. This complete miniature was executed throughout of cardboard, with the exception of the glazing of the windows, which is transparent celluloid, and the two small shafts in the entrance archway. This piece of miniature work clearly demonstrates the great possibilities of this humble and little recognized material when skilfully and artistically handled. Even the richly carved and ornamented work in the gables, in the panels above the entrance, and on the beam ends is carved in thick cardboard.

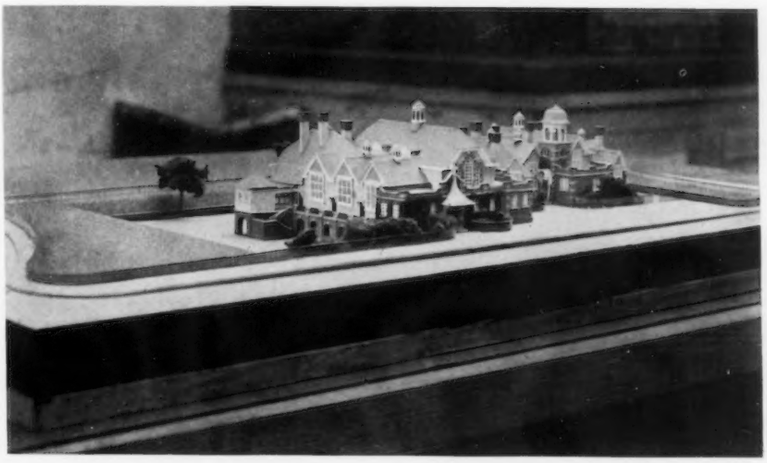


Fig. VI. Model of School at Port Sunlight, Cheshire, England

The second class of architectural miniatures includes all those that are made on purely suggestive lines and are only sufficiently detailed and otherwise treated to convey a general idea of the dimensions and architectural features of the buildings represented. Miniatures of this class are useful for the purpose of showing, in an effective manner, arrangements of buildings and other features in town planning schemes and local improvements, and for conveying correct ideas of the grouping of detached buildings, such as are found in large institutions, colleges, and hospitals. Miniatures for the purpose just alluded to can, as a rule, be made almost entirely of cardboard, wood being used only for such details as columns, vases, etc., or any other details which can be formed on a lathe. Great elaboration is unnecessary, and ornamentation of any kind need only be represented in a very simple manner. It is a very common thing to see in miniatures, now frequently made by hands understood to be skilled in this work, most of the details merely drawn or painted on the perfectly flat surfaces; but there is no necessity for this method to be followed by the artist endowed with moderate skill, who, instead of drawing or painting the doors, windows, and other details, can render all such details with their proper recessing and projections, by the aid of his knife, and other simple tools. It is as easy for a skilled artist to cut out a door or a window opening and

Fig. VII. Model of Cycle Works at Coventry, England

finish it in an expressive manner, as to carefully draw or color it on a flat surface, so as to convey the idea of depths and projection.

Miniatures of the class described above are sufficiently expressive for all ordinary purposes, while they are not necessarily expensive. There is little doubt that two conditions have largely interfered with the more frequent use of miniatures in the profession: first, the difficulty commonly obtained in procuring them of a satisfactory character; second, the cost when they are constructed in any way approaching a truthful and artistic manner. The last condition must always be reckoned with, as all miniatures, if they are at all perfect, will take time to construct; but such a miniature so built will always be worth the time and money expended.

So-called "high art miniatures" are constructed as absolutely perfect as skill and materials can attain, taking into consideration the scale being used and with the view of permanent interest, or for museum or exhibition purposes. The miniatures shown in Figs. IV, V, VI, and VII demanded the greatest care and attention to detail throughout their formation, from the planning to the final touch, and the proper use of the numerous materials, which are not only beyond the power of cardboard and paint to successfully imitate, however cunningly manipulated, but are desirable in themselves, such as certain forms of iron work, marbles and granite, stained glass, choice woods, ornamentally worked or turned, or inlaid to represent parquetry (to proper scale). Notwithstanding the introduction of these adjuncts, cardboard must remain the dominant material if the miniature is to be lasting and in every way satisfactory in its character. The writer has already spoken of the disadvantages and the limitations attending the use of plaster and wood in miniature constructions and need not enlarge upon them here. It is enough to add that none of the miniatures illustrated could be made of plaster or wood in any way approaching their accuracy and delicacy, even if the question of their durability were not considered.

The miniatures illustrated in Figs. IV, V, VI, and VII are perfect reproductions of their prototypes, having every detail shown to scale. No one has any idea of the fascination of such a miniature, especially when the group of buildings is artistically built and colored in flat oils and surrounded by such accessories as roads with miniature trees — not merely pieces of sponge stained, or a lot of grasses or moss stuck around, but little trees beautifully constructed and treated for their foliage: also little scale automobiles, street cars, etc.; pretty rivers with boats, etc.; railroads with perfectly ballasted tracks and perfectly scaled trains (see Figs. IV, V, and VII). Figure IV represents a miniature — scale ¼ foot to 1 inch — built for a model engineering firm in London, England, showing a beautifully laid out private estate, with a miniature railroad running around the grounds, such as is seen in many of the large estates abroad. This miniature shows a fine English house, with its surrounding lawns, garage, greenhouse, tennis lawn, lake, river, and with a very beautiful little Japanese tea house in the center of the lake, with a little bridge joining it to the garden. This miniature was built to illustrate more fully the different accessories needed for such a miniature railway, which would be one-quarter full size, or 15-inch gauge, and, as they were perfect reproductions, the miniature was used to order from instead of keeping the different parts in stock.

The next miniature is that built of the Austin Motor Works, Birmingham, England (Fig. V), built to the scale of 16 feet to 1 inch and covering an area of 16 square feet. This shows a fine group of one-story buildings, surrounded by a layout of roads, grounds, and railroads, with all the fine details necessary. There is nothing out of scale, not even the automobiles, which are correct and yet are only ¾ inch long. Note how artistically the road which crosses the tracks is treated with its English hedges and old trees. This model was specially constructed for a lighting scheme, having all the windows and roofs pierced and glazed, so the miniature can be shown as if lighted at night by diffused light reflected through the buildings from lamps in the deep base seen in the illustration. The miniature was shown at several exhibitions abroad.

Figure VI is a view of one of the several hundred buildings used in the wonderful model of the village of Port Sunlight, Cheshire, England, and was constructed to the minute scale of 32 feet to 1 inch; every building being built to allow the passage of reflected light, having all the tiny windows glazed. The tiny building under consideration is a copy of one of the schools at that place. Every detail was shown in this little building, even to the ivy on the walls, which was not painted on but made of a special material. It will be noted that there is a sunken playground, entered by two sloping ways from terraces at the main level. The playground shown in this view is for the girls, the boys' is at the back. This little building is not 7 inches long, and to the top of the bell tower is only about 1¼ inches high. The reader can quite understand the experience needed, other things not considered, of fabricating such a miniature, first in laying out the different sides of the building, then cutting out and constructing same — some pieces not being more than 1/16 inch long — then the painting, needing the greatest care, as that branch of the work could ruin a fine piece of work very easily.

Figure VII is a miniature of the large Rudge-Whitworth Cycle Works, Coventry, England, also built to the scale of 16 feet to 1 inch, and was exhibited all over England by the said firm. It is a very interesting piece of work and shows some very fine and unique construction. In the miniature is shown a complete private telephone system, with poles and wires, perfect outside staircases, and in the foreground will be seen two double decked street cars, while the two directors' private automobiles are seen standing in front of the offices. This was also constructed for a lighting scheme.

DETAIL OF ENTRANCE

THE HENRY PHIPPS INSTITUTE FOR THE TREATMENT OF TUBERCULOSIS, PHILADELPHIA, PA.

GROSVENOR ATTERBURY, ARCHITECT

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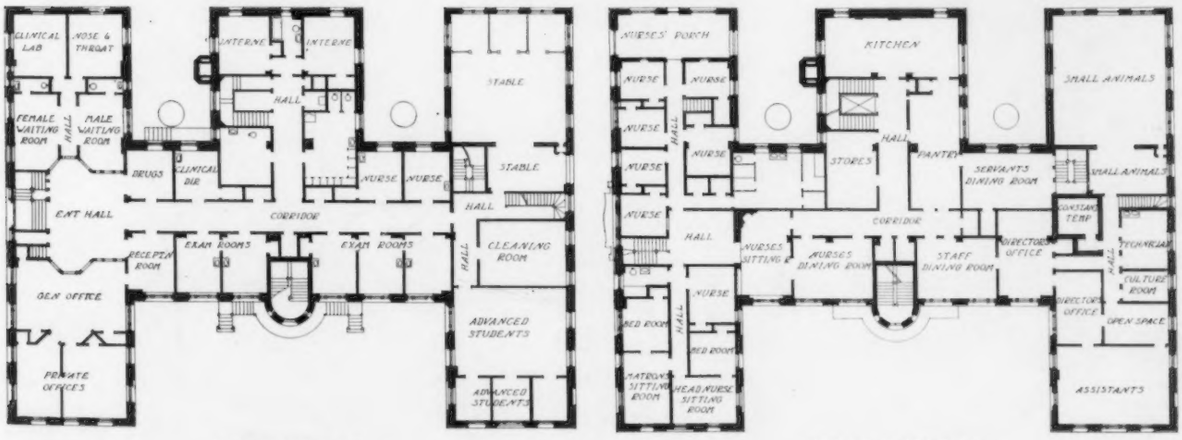
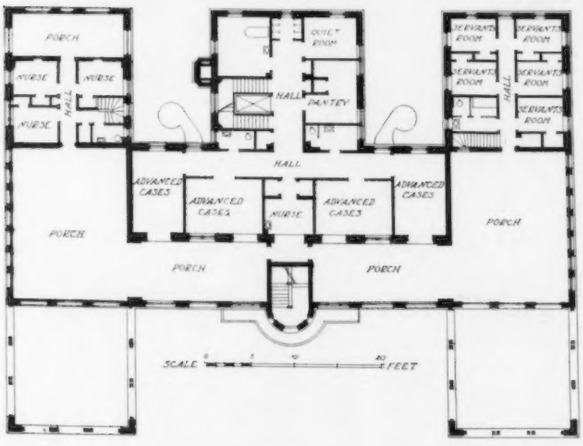


FIRST FLOOR PLAN

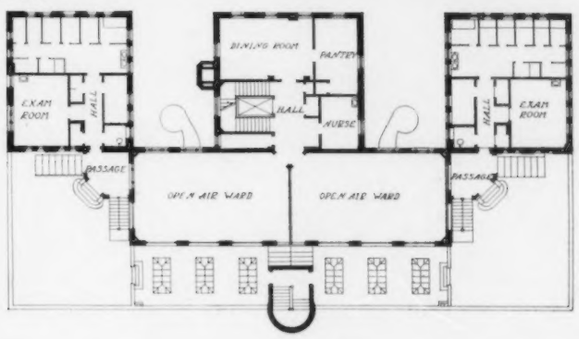
SECOND FLOOR PLAN

THE HENRY PHIPPS INSTITUTE FOR THE TREATMENT OF TUBERCULOSIS, PHILADELPHIA, PA.
GROSVENOR ATTERBURY, ARCHITECT

DETAIL OF COURT



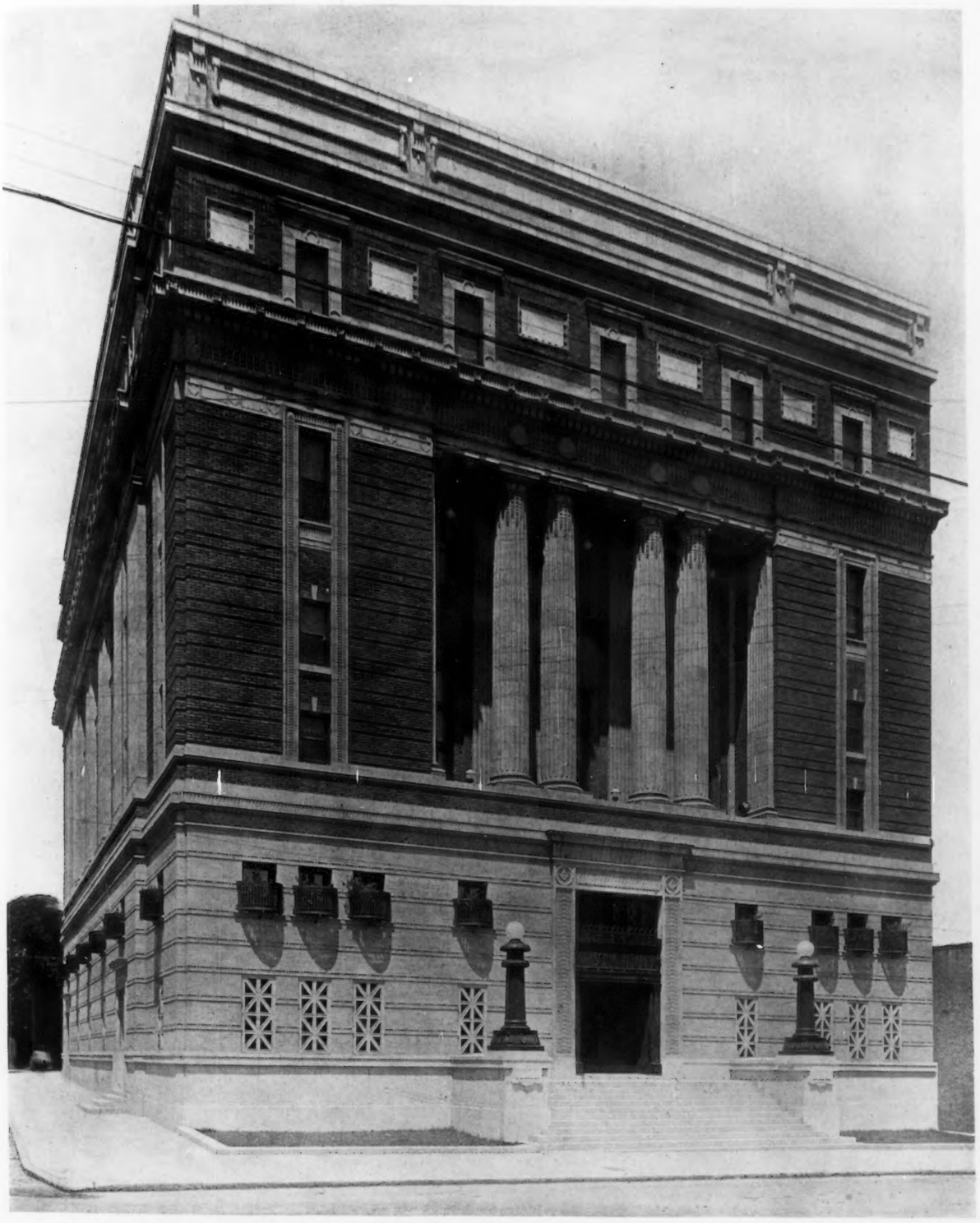
THIRD FLOOR PLAN



FOURTH FLOOR PLAN

THE HENRY PHIPPS INSTITUTE FOR THE TREATMENT OF TUBERCULOSIS, PHILADELPHIA, PA.

GROSVENOR ATTERBURY, ARCHITECT



MASONIC TEMPLE BUILDING, MEMPHIS, TENN.

JONES & FURBRINGER, ARCHITECTS

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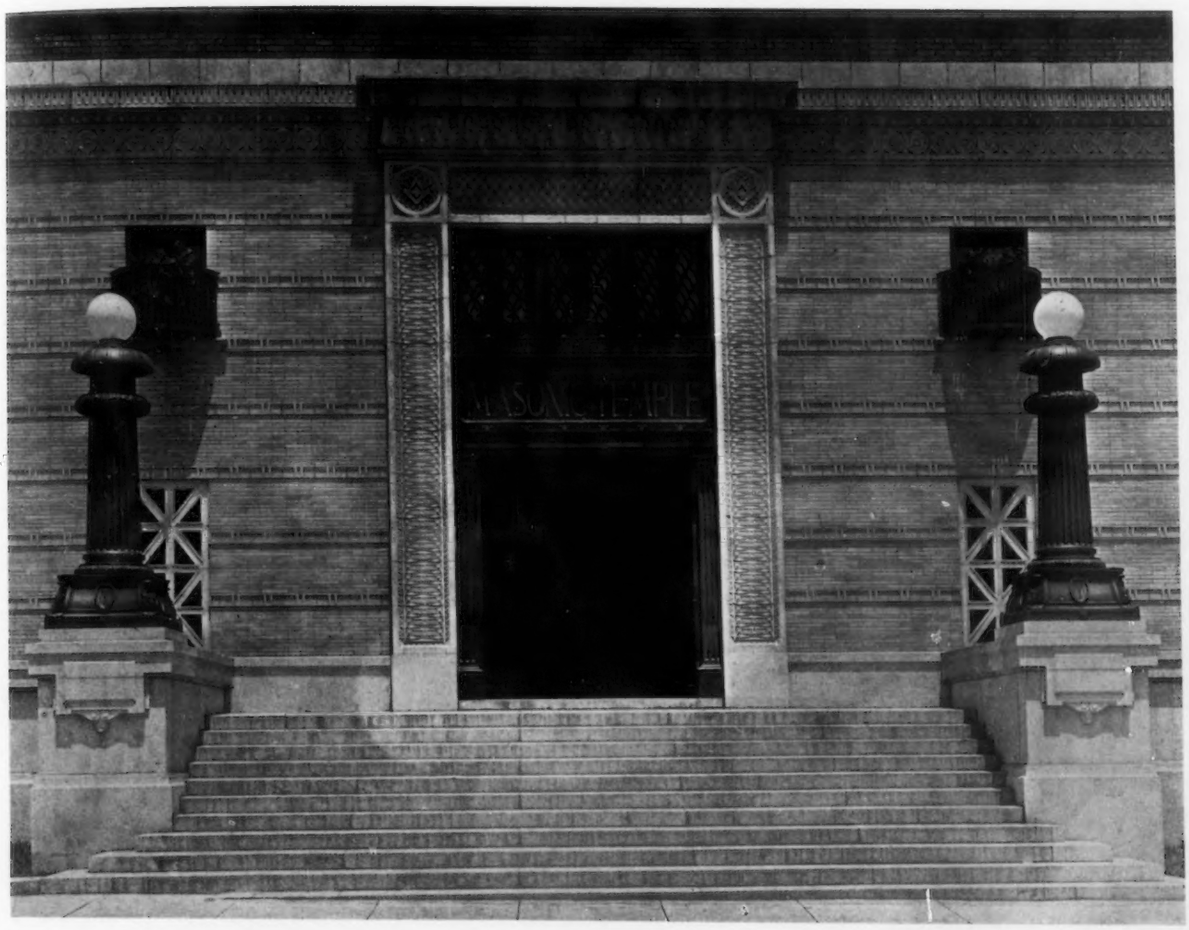
Mau



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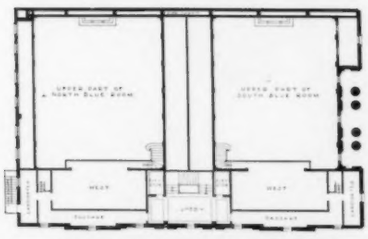
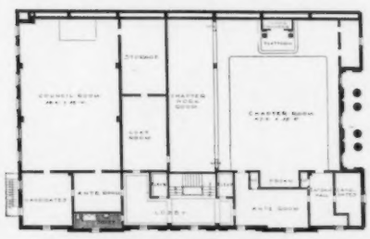


SECOND MEZZANINE FLOOR PLAN



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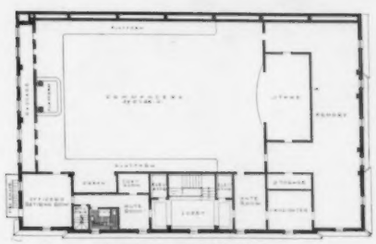

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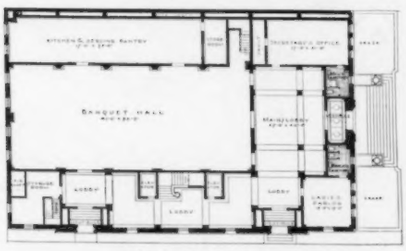
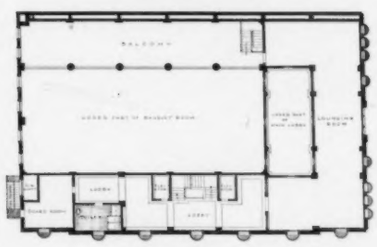


FIRST FLOOR PLAN



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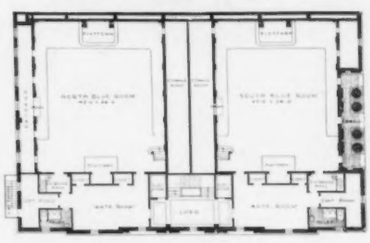
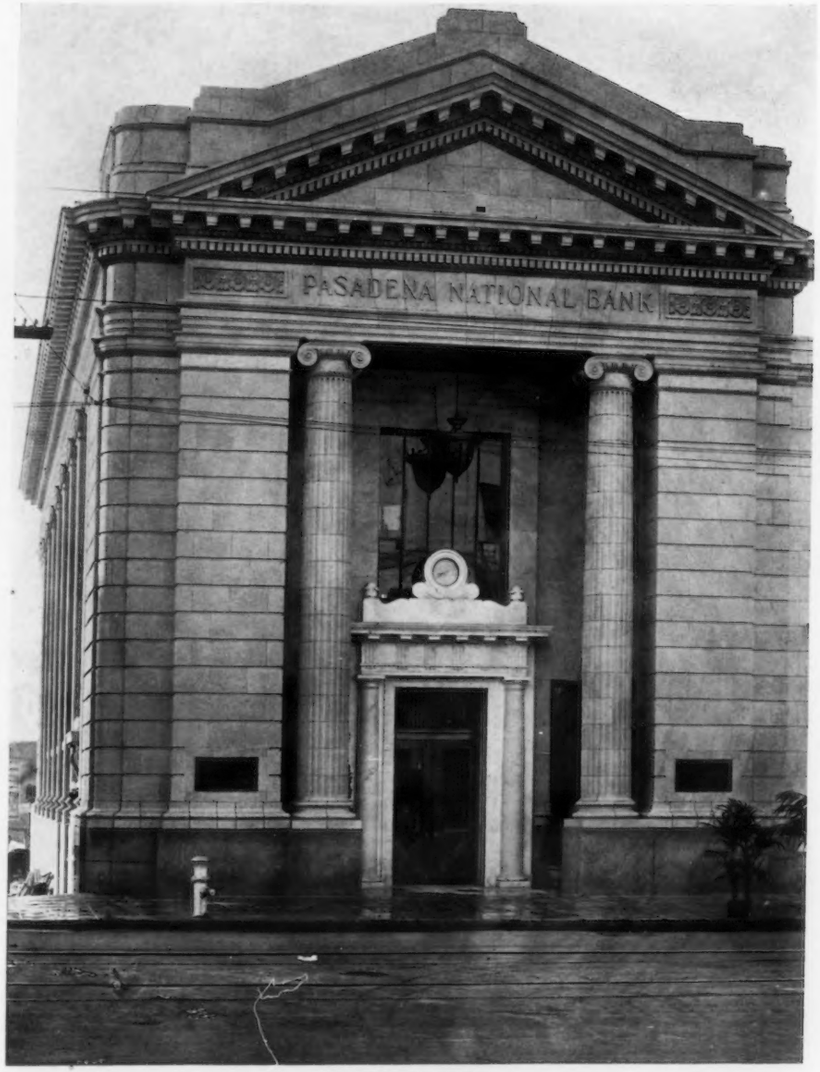


SECOND FLOOR PLAN

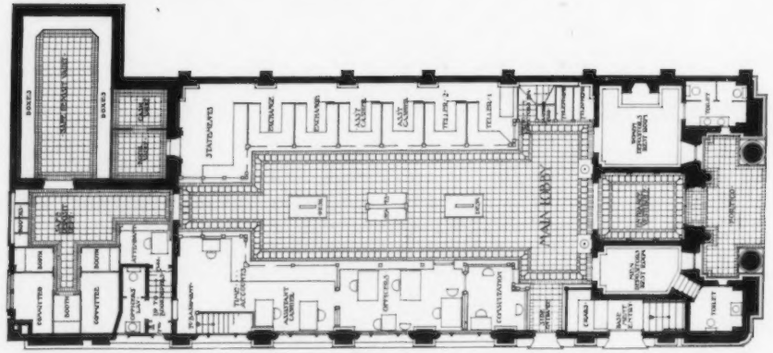
MASONIC TEMPLE BUILDING, MEMPHIS, TENN.

JONES & FURBRINGER, ARCHITECTS



ENTRANCE FRONT

GENERAL VIEW



FIRST FLOOR PLAN

PASADENA NATIONAL BANK BUILDING, PASADENA, CAL.

SYLVANUS B. MARSTON, ARCHITECT

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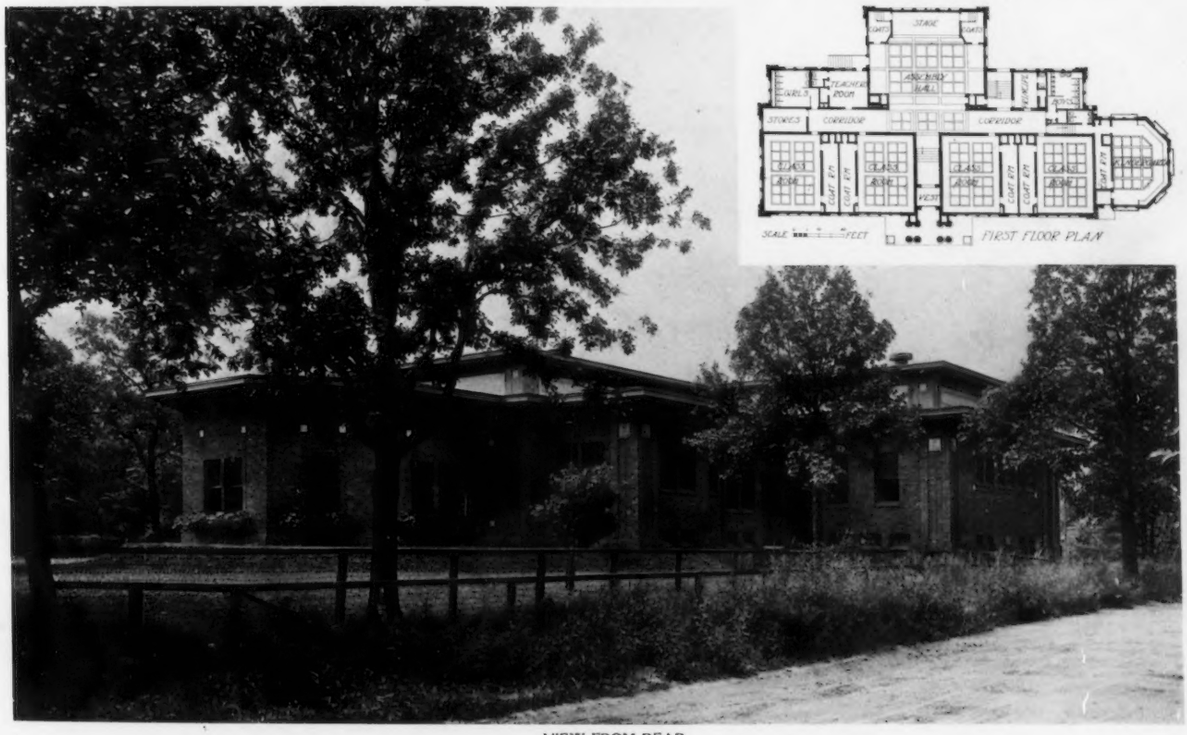
DETAIL OF ENTRANCE

INTERIOR LOOKING FROM ENTRANCE

PASADENA NATIONAL BANK BUILDING, PASADENA, CAL.

SYLVANUS B. MARSTON, ARCHITECT

ENTRANCE FRONT

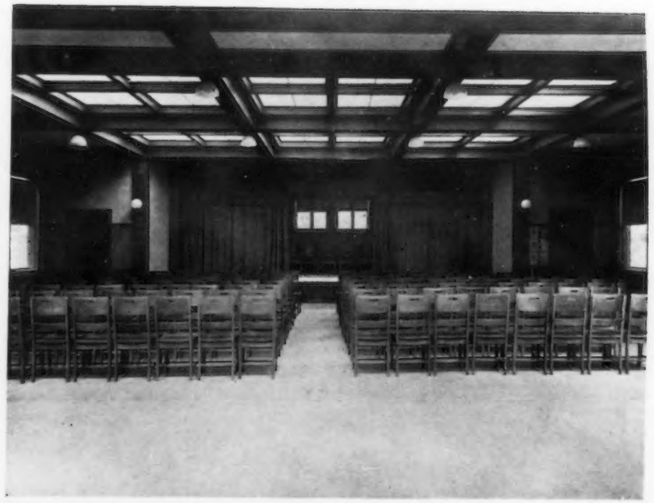


VIEW FROM REAR

JOSEPH SEARS PUBLIC SCHOOL, KENILWORTH, ILL.

GEORGE W. MAHER, ARCHITECT

DETAIL OF ENTRANCE

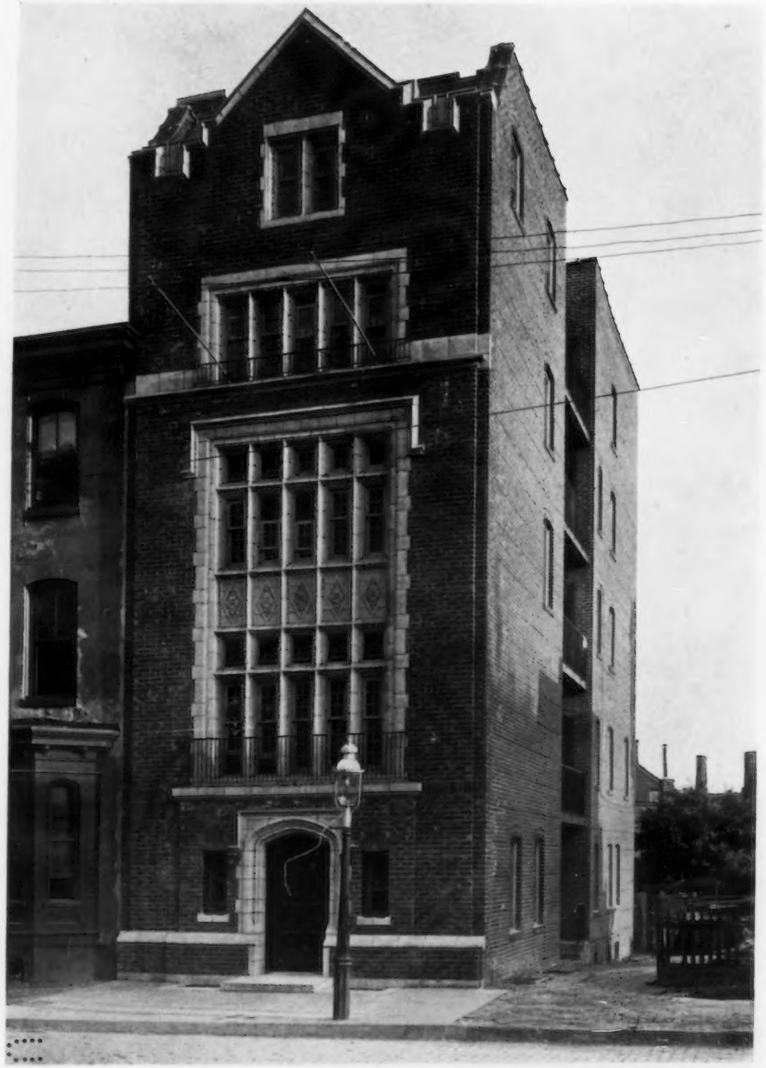


ASSEMBLY HALL

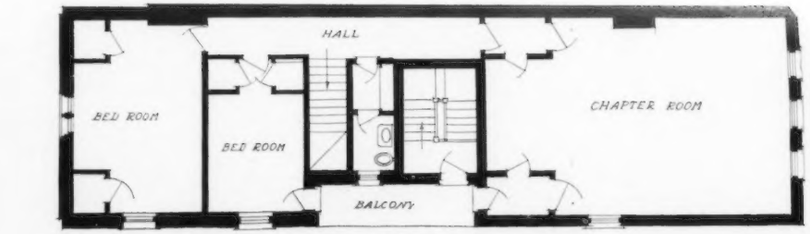
CLASS ROOM

JOSEPH SEARS PUBLIC SCHOOL, KENILWORTH, ILL.

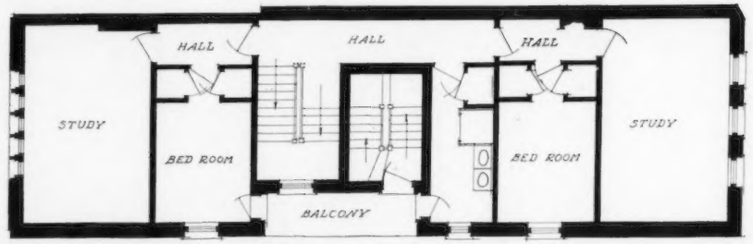
GEORGE W. MAHER, ARCHITECT



STREET FACADE



FIFTH FLOOR PLAN



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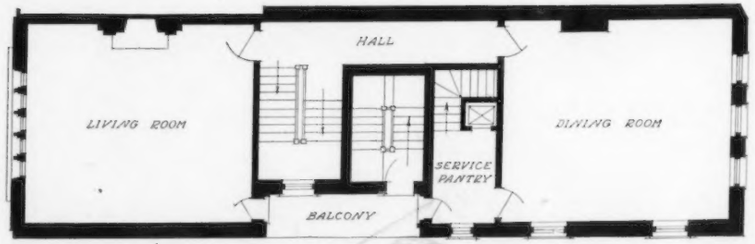

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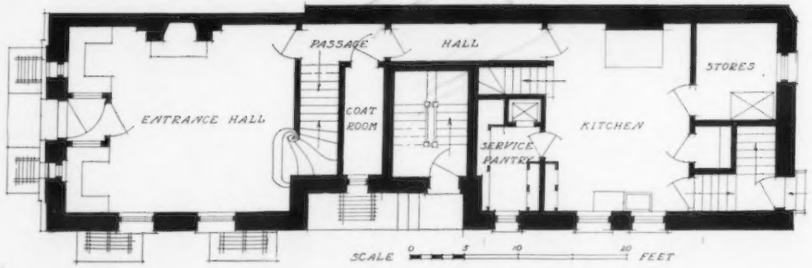
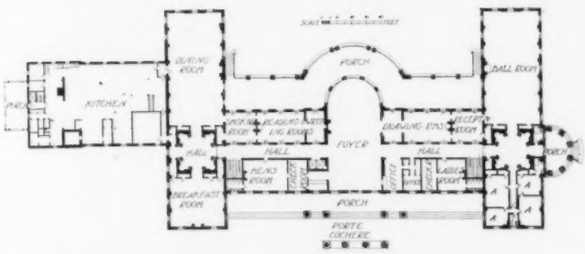


FIRST FLOOR PLAN

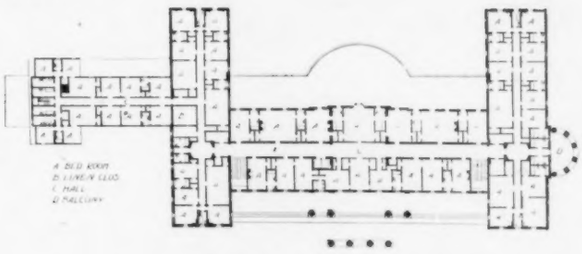
DELTA UPSILON CHAPTER HOUSE, PHILADELPHIA, PA.

LESTER KINTZING, ARCHITECT

ENTRANCE FRONT



MAIN FLOOR PLAN



TYPICAL FLOOR PLAN

VIEW FROM REAR LAWN

HOTEL O-TE-SA-GA, COOPERSTOWN, N. Y.
PERCY GRIFFIN, ARCHITECT

EAST FRONT

HOUSE OF JOHN W. GARY, ESQ., GLENCOE, ILL.

FREDERICK W. PERKINS, ARCHITECT

VIEW FROM APPROACH

DETAIL OF ENTRANCE FRONT

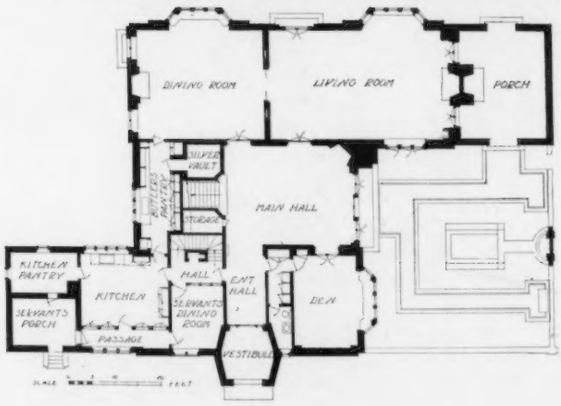
HOUSE OF JOHN W. GARY, ESQ., GLENCOE, ILL.

FREDERICK W. PERKINS, ARCHITECT

U of M

Mrou

VIEW OF COURT



FIRST FLOOR PLAN

SECOND FLOOR PLAN

HOUSE OF JOHN W. GARY, ESQ., GLENCOE, ILL.

FREDERICK W. PERKINS, ARCHITECT

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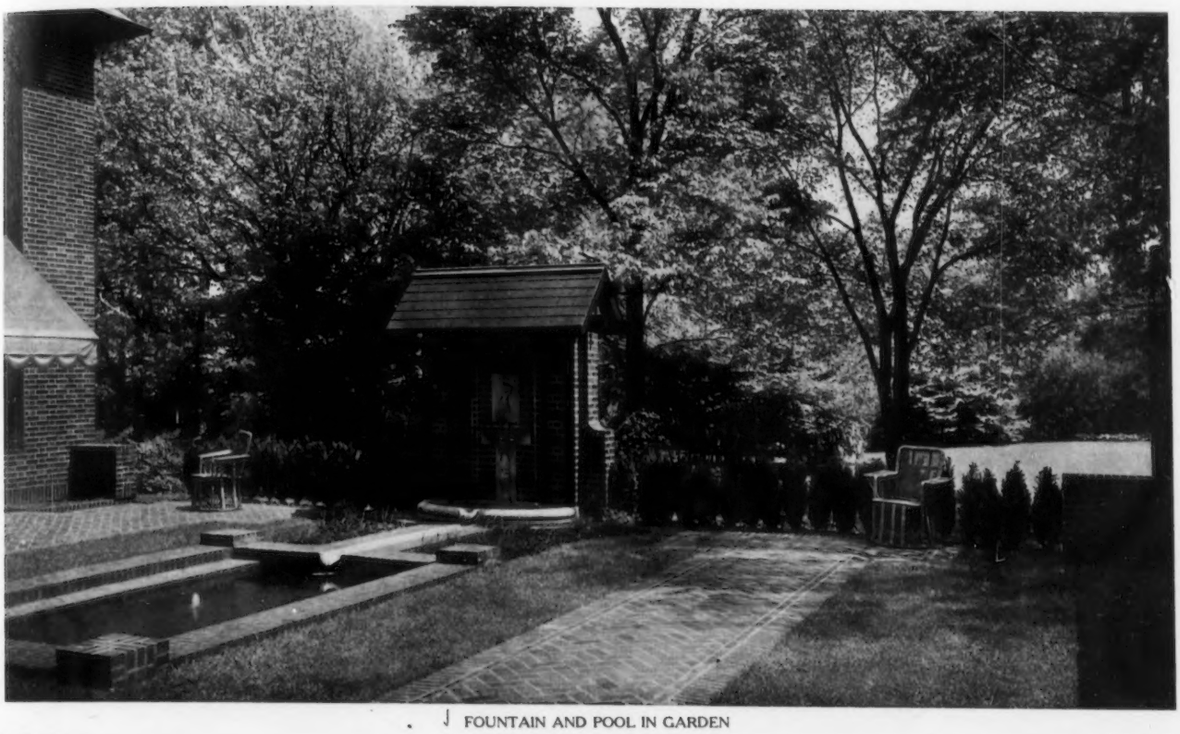


FOUNTAIN AND POOL IN GARDEN

VIEW FROM GARDEN

HOUSE OF JOHN W. GARY, ESQ., GLENCOE, ILL.
FREDERICK W. PERKINS, ARCHITECT.

DINING ROOM

LIVING ROOM

HOUSE OF JOHN W. GARY, ESQ., GLENCOE, ILL.
FREDERICK W. PERKINS, ARCHITECT

The Atelier System of Architectural Education in America.

By AUSTIN W. LORD.

IN a previous paper emphasis was laid upon the absolute necessity of thorough qualification on the part of students before entering upon an architectural career, and let it be remembered that one should be fully satisfied of a real interest in and taste for things artistic; for without this inherent desire inspiration is lacking and only an indifferent pursuit of the art will result. Further, let the student be well equipped mentally and physically, and with the culture that a good academic training gives, he is in a fair way to secure recognition.

Coincident with architectural study there should be some definite and practical pursuit of the study of painting, more particularly, perhaps, as it applies to architectural embellishment. This would include general observation and study of work in the museums, and, if one has the opportunity of foreign travel, the study could be extended to the great mural decorations found in important buildings in foreign cities. This study and observation should include sculpture, as in the strict sense we cannot have a perfect piece of architecture without certain painted and sculptured accessories. Naturally, an interest in the arts of painting and sculpture will lead one to a study of the applied arts,—the art of the silversmith, the mosaic-worker, the wood-carver, the stone-cutter, to the design and composition of fabrics, furniture, stained glass, etc. It is almost impossible to name any art that does not, in one way or another, enter into the general composition and realization of an architectural undertaking, and, while it is, perhaps, impossible for a student to acquire knowledge through the medium of schools, academies, or offices in these various branches of his work, he can, as pointed out above, acquire a general knowledge through observation and study of work always in evidence in the museums, in the street, in monuments, in exhibitions devoted to the various productions in the applied arts, in the shops, etc.

The student having the general qualifications and tendencies outlined above, and who has a certain natural facility in drawing, is in a fair way to undertake successfully an artistic career. In Renaissance times it was not considered too much for an artist to undertake work in architecture, painting, and sculpture, and many of them produced beautiful work as silversmiths, bronze-workers, wood-carvers, etchers, and the like. We are taught in these times to believe that we must specialize in order to succeed, but I believe there is too much of specialization, with the result that we are content to do a very few things where, with a little exertion, we are capable of doing a great many. The tendency is to restrict and to interfere with the liberty of action which is so necessary to the artist. The artist should have the field of art opened to him, and he should be trained in a way to make him appreciate more and more its unlimited possibilities.

But with all of this preparation talent and opportunity, nothing avails without hard work and there is perhaps no other profession, certainly in the arts, that calls for such unremitting toil both day and night as the profession of architecture. This is particularly true in times of great competitions for important buildings and monuments, when every resource of the architect and his staff is called into play. It is generally under these conditions that the most successful work is put forth, and one must have that equipment born of natural ability and thorough training to be at all in the running. Therefore, let no man attempt this work on the supposition that he is to become great through merely receiving impressions and through exercising his faculties without effort and without direction, for in such case his brother practitioner of more solid training and more rational point of view will in the end outstrip him.

Assuming that the student has actually made up his mind, it is important that he should be properly equipped with the simple tools of his profession.

Instruments. There are various makes of instruments in the market, those of French, Swiss, and German manufacture being of high quality. An application to THE BRICKBVILDER, or to any architect whom the student knows, will suffice to inform him where they can be procured, and the catalogues which these firms will gladly furnish will enable him to choose intelligently. A box of instruments may cost from $10 to $15 or $20 and upwards. I would not recommend the purchase of cheap instruments for this work. As one progresses the value of good equipment of this character is always in evidence. The same is true of T-squares, triangles, curves, and special instruments. Of inks, the best results are usually secured by the use of stick India ink ground in a saucer made for the purpose and carefully protected from dust. However, the bottled waterproof ink which can be bought all prepared is more convenient to use and gives excellent results.

There are many makes of drawing papers on the market, and the kind to be used depends in a great measure upon the character of the problem and the method of rendering. A trial of a few grades of good paper on different problems will enable the student to find one which will give uniform satisfaction. The usual paper comes in sheets of various sizes and weights, and where extra large sizes are required two or more sheets may be pasted together.

In addition to the above, students of the atelier should provide themselves with ink or color slabs, water-color boxes and sketch book or sketch block, scrap book for clippings and other architectural notes, portfolio for drawings, pencil rubbers and ink erasers, sponge or kneaded rubber, pencil holders, lettering pens, oil stone and oil, liquid gum, paste or mucilage, agate stylus, good quality of tracing paper in rolls, cross section paper, and an adequate supply of manila or ordinary detail paper used in architects' offices.

For the mounting of drawings there should be provided stretchers of various sizes, various grades of colored paper for borders (preferably gray in tone), paste pot, paste brushes, etc.

Of drawing boards little need be said—they should be of pine reinforced at the ends, and when above twenty-four inches in width should have an added reinforcement of cleats on one side. For small drawings, preliminary

sketches, and exercises, special boards may be obtained. A convenient style of small board much used in the ateliers consists of an outer frame and a flush panel, over which the paper may be stretched and the edges forced into grooves and secured by small strips of wood without the aid of glue. Drawing tables may be purchased from firms who make a specialty of their manufacture. Table tops should be adjustable in a way to give a slight pitch to the drawing board, thus obviating the necessity of the draftsman bending too far over his work.

Students may provide themselves with brushes and water color, but no elaborate equipment of this kind is necessary. In the beginning two or three brushes for rendering are all that is required, and a water-color box containing five or six tubes of color is sufficient. In fact, the organization of the atelier would necessarily be under the direction of the Patron, who would advise his students in all matters pertaining to materials, equipment, etc.

To go more particularly into the organization of the atelier, we will assume that in a certain thriving town are a number of progressive young men who have received their education in the city schools, with perhaps some special training in certain branches. These young men are employed in architects' offices and have been encouraged to study architecture independently of their office practice. They have neither the time nor the means to attend a school of architecture in this country, much less abroad. At this juncture some one of the practising architects in the city offers his services, generally free of charge, as Patron of the proposed atelier. The atelier is formed with a *massier* and *sous massier* as the authorized officers, who look after the details of administration, etc., and maintain the general organization.

These ateliers are organized on the most economical basis possible. Owing to the fact that young men engaging in this work are generally of limited means and cannot afford any unnecessary expense, a cheap loft in the commercial part of the city can be secured at a low rental. Elevator and janitor service is generally not available. Heat and light often add a maintenance charge, but with a reasonable number of students, say twenty to thirty, the entire individual expense per month ought not to exceed $8 to $10. This expense is quite within the means of the average draftsman, and when this expenditure is compared with the expenditure of a college course, it will be seen that the student working under the atelier system is placed in a very advantageous position. He does not, of course, have the same advantages regarding academic instruction as the college man, but he makes up for it in a measure through his experience in office work at a certain remuneration.

With a view of supplying this scientific instruction, many of the colleges have organized courses in extension teaching in various cities and towns throughout the country. If students in the ateliers will avail themselves of the extension teaching courses, they place themselves quite on a par with the advantages of the average college student. It has been pointed out that men giving their days to office work and their evenings to atelier work and extension courses develop into quite as competent architectural draftsmen as those from our colleges, and they have the added advantage of practical experience in an office which to most young men eager to enter into business for themselves is a valuable asset. There are, of course, advantages both on the side of the courses given in our schools and the courses given in ateliers. In the schools young men cannot, under the requirements of a full curriculum, have time for practical office work. On the other hand, the men working under the atelier system have little time for the broad instruction to be secured in a thorough college course. Experience only will make up for this deficiency in either case; that is, experience in an office for the college man, and a longer term of study for the man studying under the atelier and office system. In other words, it becomes a matter of time as to when both classes of men will have arrived practically at the same proficiency by different roads. There are, however, many decided advantages in favor of the atelier-office system as it is thus far developed in this country. The men under the atelier-office system are perhaps a little more serious and a little more helpful to each other. The latter tendency is of vital importance in the success of any atelier. Without it the spirit of comradeship is lost, and any lack of co-operation and assistance between the various classes of men that make up an atelier generally results in failure. The whole success of the atelier depends upon the assistance one student may be able to render another, either in the way of advice, consultation, or in actual work upon the designs in hand.

The ateliers in the large cities and in the small towns as well are of necessity made up of a class of men of varied attainments. Some may have received their education in a grammar or high school, some in small colleges, others will have had only the advantages of a district school. They will have had varying degrees of office experience or no office experience at all. Some will have had instruction in free-hand or mechanical drawing, and others will be totally ignorant as to the most elementary requirements in connection with this work. This lot of students in a properly organized atelier can soon be moulded into a perfect working machine. The competitive side of the atelier work is ever an incentive to extraordinary exertion on the part of the student, and the fact that the student is put in a position where he has to depend upon himself, and where he gets proper credit for work performed naturally, tends to cultivate that enthusiasm which is the basis of successful work in any art. As before stated, the purpose of the foundation of the atelier system was to provide instruction for draftsmen in offices and for all those who desire to study architecture, but are unable to avail themselves of the advantages of a college course. The atelier system is quite fully recognized by the colleges, and at present about one-third of the total enrolment of the ateliers is from various colleges and technical schools in the country. From this it will be seen that the men competing under the atelier system cannot be classed under regular academic standards and that, therefore, scientific instruction should be given either in the atelier or through the medium of extension courses above referred to. Notwithstanding this lack of qualification, the general results shown have been so universally satisfactory that the atelier system is growing in strength and favor throughout the country. Under present conditions the only requirement for admission to the atelier is that a man shall have studied and drawn out the orders of architecture. The student can generally accomplish this in an architect's

office, the night school, or the correspondence school, or the work could be done under the guidance of the Patron of the proposed atelier. The competitions extend over a period of ten to eleven months, from August to July, and are carried on through the medium of a series of programs issued by the Society of Beaux-Arts Architects in New York in consultation with representatives of the college and other ateliers. Programs are issued from time to time and the students work out their solutions in the form of a sketch (*esquisse*), without the aid of any data in the way of photographs or books or other information given directly or indirectly. A certain number of hours are allowed for the preparation of this sketch, which must be the basis for future development of the problem. The credit award to the student by the jury in the final judgment is based not only upon his performance in the preparation of the sketch, but upon its subsequent development from the standpoint of composition, draftsmanship, and general presentation.

The "preliminary sketch" must not in any way be an elaborate production. It should be simple and straightforward in what we call indication; that is, it should be simple and direct in character and drawing. No detail is to be indicated. In other words, a broad suggestion of the idea in mind must be so simply indicated in the draftsmanship as to be capable of many different interpretations in the final development of the problem. A copy of this sketch is retained by the student, and the original is left with the officer or attendant in charge during the preparation of the sketch. A certain period, depending upon the character of the problem, ranging from four to seven weeks, is allowed for its development under the advice of the Patron. The aim in the development of the sketch is to carry out the ideas embodied without fundamental changes from the original scheme or *parti*, which might mean the elimination of his drawings from the judgment (*hors de concours*), thus depriving him of any mentions or values. Experience has shown that this system encourages the student in the work of extensive study and observation both of books and of executed work with a view to acquainting himself with the various solutions of a single problem, and having once made a sketch and thereby formulated his impressions, to compel him to develop these impressions along systematic lines and in a certain fixed direction, instead of wasting his time in fruitless search after other solutions of the problem.

The final drawing (*rendu*) is generally forwarded to New York and judged by a jury of architects selected by the members of the Committee on Education, and composed of representatives from the various colleges and ateliers interested. All drawings bear the names of their authors and the school or atelier from which they come, but the names are covered as soon as the drawings are received for judgment, so that the jury has no knowledge of their authorship. Each drawing receives careful attention and its status is determined by a vote of the jury. To make these judgments of the jury as thorough as possible, the custom of having a preliminary jury inspect the drawings and group them according to merit into two, three, four or more classes, according to the number of drawings, has been found of great advantage. When the regular jury comes to give its judgment a much more comprehensive comparison can be made of the quality of the various drawings submitted. The double jury has the advantage of bringing competitive work under the scrutiny of at least certain members of the jury a second time and thereby gives opportunity for more thorough study of the respective presentations. It will be seen that in cases where four to five hundred drawings are submitted for a single judgment that a great deal of time and care is required. There are, of course, certain drawings that can be judged quickly and proper marks attached. There are other drawings that are difficult of judgment and consequently require more time and even two or three votes and intervening discussions to arrive at a decision. I refer to this to show with what care this work is conducted by the Committee on Education. The committee tries not only to give proper judgment, but to aid Patrons and teachers in the various ateliers and schools by writing criticisms directly upon the drawings to make more clear the point of view of the jury. This kind of criticism is almost universally demanded by the students of the ateliers; but up to the present time no system has been devised by the Committee on Education whereby full criticism can be given to each drawing. It would entail a great deal of time and expense which the committee is not at present organized to meet, but the aim is gradually to develop the judgments to the extent that they will more strongly supplement the work of the Patron and instructor and at the same time give needed encouragement to the student. It has been pointed out that the least qualification required of students entering the atelier is that they shall know something of the orders of architecture. This does not mean that they will be allowed to go on with advanced work without first having demonstrated their ability to do the orders as required in the regular program of competition. Even students of advanced standing profit by taking up the work in its early stages and carrying it through in a systematic way, and generally the only proof that the Committee on Education has in regard to a man's ability must be based upon the work he produces under the regular competition system. His work can then be compared with that of other students and the student himself has a chance to compare his work with others, and thus the status of each individual student can easily be determined. The students are grouped into classes and can be taught to better advantage in this manner than if allowed to pursue the course in a hap-hazard way. It is pointed out by the Committee on Education that the most elementary divisions of the society's work is known as "order problems" or "*analytiques*." It goes on to say, "success in problems of this class depends primarily upon a correct understanding and knowledge of the orders, — such a knowledge as would enable a student to design a doorway, a gateway, an entrance pavilion or similar problem with ease and accuracy, presenting some detail at a large scale, casting the shadows correctly, and arranging his drawings effectively on the sheet. It should not be concluded from the above that a design is considered poor and incomplete that does not in some way involve the use of one of the classic orders; quite the reverse is true, but the society holds that a careful study of these columns and entablatures insures invaluable training to the eye and memory of the beginner."

The next paper will treat of the various classes and a general discussion of the programs and *projet* work.

Water Color Drawing of Dining Halls, Dormitory Group, Princeton University, Princeton, N. J.

Day & Klauder, Architects — Charles Z. Klauder, Delineator

Monographs on Architectural Renderers.

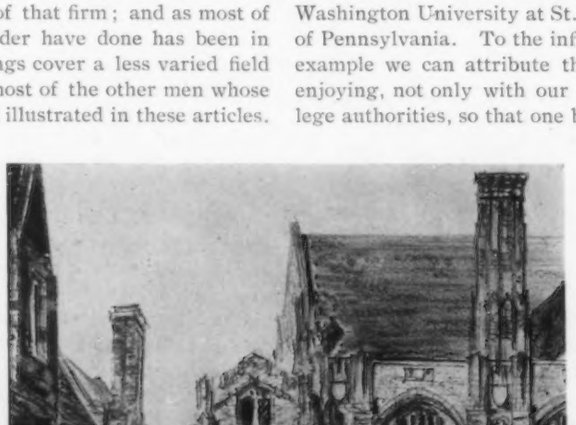
BEING A SERIES OF ARTICLES ON THE ARCHITECTURAL RENDERERS OF TO-DAY, ACCOMPANIED BY CHARACTERISTIC EXAMPLES OF THEIR WORK.

IX. THE WORK OF CHARLES Z. KLAUDER.

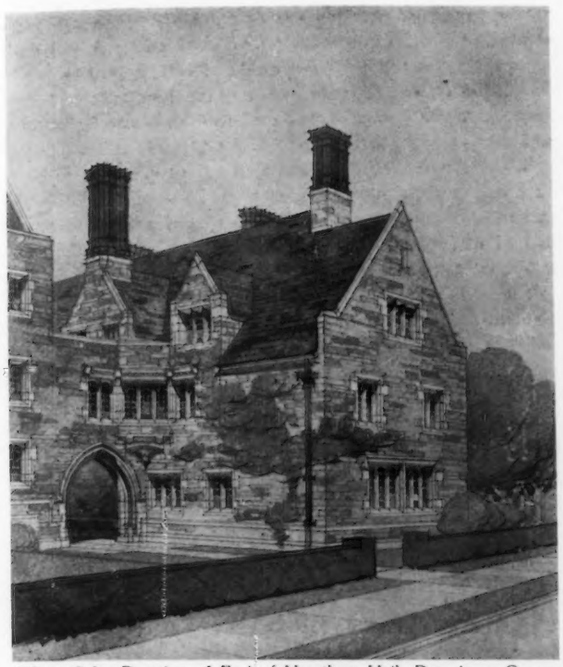
MORE purely an architect than most architectural renderers, Mr. Charles Z. Klauder constitutes with Mr. Frank Miles Day the firm of Day & Klauder, of Philadelphia. For several years before Mr. Klauder's entrance into the firm he was a draftsman in Mr. Day's office, and practically all the renderings he has made have been of the work of that firm; and as most of the work which Day & Klauder have done has been in the Gothic style, his renderings cover a less varied field than has been the case with most of the other men whose work has been discussed and illustrated in these articles.

The present-day tendency, emphasized in this firm's work, to design college buildings in the so-called traditional Collegiate style, is constantly becoming more notable, not only because the number of buildings thus designed is increasing, but also because the standard of design is with each successful building gradually being raised, and it is, curiously enough, to some of the Philadelphia architects that much of this improvement is due.

The General Theological Seminary in New York, which was designed by Mr. Charles C. Haight, is perhaps the earliest and still one of the best of these Gothic college buildings; but the real rise of the modern use of this style began when Mr. William A. Potter designed the library at Princeton and Cope & Stewardson showed how wonderfully this style could be used in their buildings at Princeton, Bryn Mawr, Washington University at St. Louis, and in the University of Pennsylvania. To the influence of their most excellent example we can attribute the vogue which this style is enjoying, not only with our architects, but with our college authorities, so that one by one our great universities, with few exceptions, have planned their new buildings in this style. Columbia and the College of the City of New York, distinctly city colleges, have not followed it; Harvard, with strong classic traditions, has adhered to them; the new buildings of the Massachusetts Institute of Technology will likewise be executed in the classic school; but Yale, after experimenting with the modified French of the dining halls and Woolsey Hall, and the modified Georgian of Woodbridge Hall, has come back to the English Gothic, and Messrs. C. C.



Crayon Sketch of Detail of Dining Halls, Princeton University
Charles Z. Klauder, Delineator



Water Color Drawing of End of Hamilton Hall, Dormitory Group, Princeton University
Day Bros. & Klauder, Architects Charles Z. Klauder, Delineator

Haight and Githens have designed practically all the later work at Yale in that style.

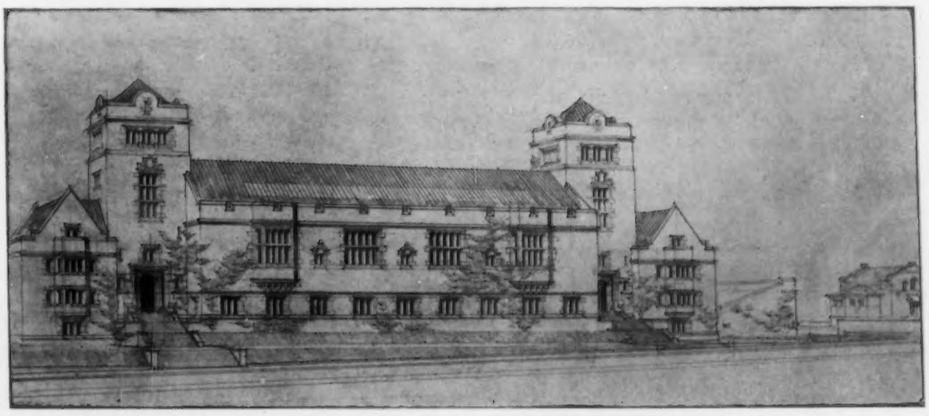
At Princeton Mr. Cram was appointed supervising architect, and under his direction various firms of architects, including Day & Klauder, have been working, if not with equally excellent results, at least with more or less uniformity. The United States Military Academy at West Point has been largely reconstructed by Cram, Goodhue & Ferguson in a very interesting and free Gothic manner; the Union Theological Seminary has been built entirely *de novo* by Allen & Collens in the same fashion, and Cornell, after many unsuccessful buildings in various styles, has finally turned to Day & Klauder for Gothic work.

The buildings thus enumerated constitute a formidable list, and yet by no means include all the work, or even all the notably good work which has been executed during recent years. If the finest buildings of the whole list were picked out, we would find that a very considerable portion of them were executed by Day & Klauder, so that in considering the renderings of Charles Z. Klauder we must bear always in mind that his work is not that of the consummate draftsman rendering the work of other men, but is rather a method by which the designer feels his way toward his ends. His methods of rendering are far more architectural than is usually the case: there is less *entourage*, less pictorial quality than is exhibited in most drawings; the architecture is preëminently the thing, and while the texture of the surface is sought after, the thing which he mainly tries to find is the appearance of the mass in perspective with the shadows indicated and the blacks of the openings accurately located.

Since practically all of his subjects are of uniform character and his method almost a fixed habit, it is surprising that his work is not monotonous. The fact that each of his drawings presents some new point of interest regardless of the similarity of the subjects and the uniformity in the way of treating them, is probably caused by his happy choice of viewpoint rather than by the intrinsic interest of the subjects indicated.

Now while his handling of line varies from such a rough approximation as he has used in the sketch of the detail of the dining halls, to the extremely formal and mechanical draftsmanship of the gymnasium for the University of Pennsylvania, there is little difference in the way in which he regards the subject: he accepts no adventitious aids by way of foliage, trees, and flowers, or fortuitous shadows, but permits his architecture to stand forth naked and unashamed, even with the interest produced by the sunlight firmly reduced to a mimimum. He depends almost entirely upon the comparison of the various masses in the different parts of the building with the interesting patterns produced by the mullioned windows indicated as strong accents against a monotone ground. Such a method might not be successful in indicating classic forms unless in a building of an unusually rich and varied character; but for the picturesque and complicated mass essential to produce a high degree of interest in Gothic forms, it is perhaps the best that we have seen, as well as being the most honest.

The drawing of the gymnasium the writer finds especially interesting because of the extreme simplicity of the way in which it is rendered, and the satisfactory result thus produced. One could hardly believe that a simple perspective with no *entourage* except the most conventional



Pencil Drawing of Gymnasium, University of Pennsylvania, Philadelphia, Pa.
Frank Miles Day & Brother, Architects Charles Z. Klauder, Delineator

possible indication of terraces and streets, and the suggestion of vines, and with practically no indication of texture or materials, could nevertheless convey so accurate an impression of the completed building. In looking at this rendering we are aware, although we know not how, that the building is of brick with stone coigns and belt courses; we know that there is a skylight extending along the entire length of the roof, and we realize the projections and reveals of the windows, although no attempt has been made to differentiate between surfaces on which the light would strike obliquely from those which would be exposed to its direct action. It would hardly be possible to reduce rendering to simpler elements; it would seem as if any office boy with a high school knowledge of perspective could accomplish the same result; but those of us who have tried to indicate our work in this very formal and inexpensive way, know that there is as much knowledge and skill behind this parade of simplicity as there is behind the most finished drawing of Otto Eggers. But such a sketch as that of the dining halls looks much more difficult, although it is in fact somewhat simpler, since a soft line easily passes for being "more artistic" than a rigid one, and dark shadows across a court will invariably add a sense of reality whether they are indicated accurately or not.

Crayon Sketch of Rear Entrance to Independence Hall, Philadelphia, Pa.
By Charles Z. Klauder

Between these two drawings lies the middle ground which Mr. Klauder habitually frequents. This is represented by the drawings of the Holder Tower, the detail of Hamilton Hall, and the drawing of the dining halls which compose a large dormitory group, part of which has been completed for some years, part of which is under erection, and part of which is still only contemplated.

The drawing of the dining halls is of them all perhaps the most interesting, probably because the design is itself as fascinating a piece of Gothic architecture as it has ever been the writer's good fortune to behold; and if this dining hall when it is erected so far transcends the drawings in beauty, as the parts of the group by Day & Klauder already completed surpass the drawings made of them, the writer believes that this will constitute the finest group of college buildings in the world, not even excepting the best that Oxford and Cambridge can exhibit.

To return to the drawing, the architecture has been left for the most part to tell its own story; the texture of the stone work is suggested rather than insisted upon. The slate roof is not specially well expressed, but vivid accents define the windows and their tracery, and Holder Hall at the left and Hamilton Hall at the right of the dining halls are indicated fully enough to show their relation to the dining halls, without being carried so far as to distract attention from the building which the picture represents. Yet even in miniature the drawing of the tower exhibits the quality of its design almost as well as the larger drawing; one feels that it is an accurate representation, and not a mere indication of mass and form. In the larger drawing of the tower (see Frontispiece) we are enabled to see some of the processes by which Mr. Klauder attains his ends: it is made on very rough paper, but with a surprising firmness of line; the textures of the surfaces are to some extent indicated by the surface of the paper alone, and atmospheric quality has been given to the sky by a pale but perceptible graded wash. In this drawing there is no indication of the divisions in the windows, which are colored in a solid tint, but the use of heavy graduated slate for roofing is admirably although simply shown. This, like all the other drawings, is characterized by a reduction of effort to a minimum, all unnecessary indication is omitted, and indeed the mechanical part of the drawing, although careful and precise, is apparently effortless.

The drawing of the end of Hamilton Hall is of not dissimilar character; the hedge, the walk, and the street are indicated in most conventional manner, yet completely; there is a simple indication of vines, sufficient perhaps for their purpose, although somewhat more attention might have been paid to them without losing the general effect. It is almost the sole criticism which might be made, but it seems as if simplicity had here been carried too far.

It may be interesting also to compare the dates at which these drawings were made: that of the gymnasium was made in 1903, the Holder Tower in 1908, the end of Hamilton Hall in 1911, the dining halls in 1913, the detail of the dining halls in 1914. This would indicate that Mr. Klauder's work had developed slowly and gradually from a very mechanical style to one quite as accurate but far less rigid. Yet we find that the sketch of the rear entrance of Independence Hall was made in 1897, and there is perhaps no one of his drawings which exhibits greater facility and freedom from mechanical perspective than this; and from this we can know that it was not necessary for him to develop indication or freedom of line, but that this and his sense of composition were his birthright.

The Architect in Cost Plus Contracts.

By WILLIAM L. BOWMAN, C.E., *of the New York Bar.*

THE most common and familiar form of cost plus contracts is termed the percentage contract where the contractor is paid a certain defined cost of the construction work with a specified percentage thereon as compensation for his overhead expenses, personal services, and profit. Another form of these contracts is the cost plus a fixed sum contract where a specified fixed sum is added to the defined cost to cover the items just mentioned. As this sum is usually calculated upon a certain percentage of the estimated cost, it ordinarily amounts to the same sum as the percentage. This is especially true since such contracts usually provide that if the magnitude of the undertaking is increased, the fixed sum to be paid the contractor shall be increased in the same proportion that the fixed sum to be paid bears to the cost of the original undertaking. There is still another form of contract which properly comes under this appellation, namely, where the owner agrees to pay for all labor and materials and give a building superintendent a fixed weekly or monthly compensation for ordering materials, hiring men, and generally taking complete charge of the construction work. Is the legal position of the architect any different in such cases than in the ordinary lump sum contract? Are his duties and responsibilities any different?

Generally speaking, both of these questions can be answered in the negative. However, since the architect must act as the owner's adviser in the matter as to what form of contract is most advantageous and economical under all circumstances, there are several points regarding these cost plus contracts and the relations, rights, and liabilities created by them that are worthy of some attention. In his rôle as the protector of the owner's pocketbook, a knowledge of the good and bad features of such contracts is essential.

The ethics of the architectural profession call for the payment of services in certain percentages of a defined cost. Thus the architect works under the form of a percentage contract. Why does he as a rule discourage this familiar form of contract for the contractor? The predominant reason as given by the contractors is that since they favor it, the architects must necessarily disapprove. To-day the two real reasons for the architect's position on this subject are: first, the distrust of the contractors due to their reputation in the past; and, secondly, the fact that the architect has much more detail work in his superintendence under the cost plus contracts than in the usual uniform contract. He must keep more assistants on the work to properly check the costs of materials, labor, etc. This also requires more time of the architect himself, since he must keep closely in touch with his assistants and with the work so that he may know that they are not being misled or deceived. Are there not advantages to the owner which should ordinarily make him glad to pay for the architect's extra help and somewhat more, if required, for the extra personal service?

Under the lump sum contract, when the contractor finds that he has a losing job, he naturally does everything to save himself. He is especially keen on trying to get the architect or the owner in a position where he can stop the work and claim a breach of the contract. If his losses are going to be large, the work is stopped and he takes his chance in a lawsuit with the owner. There are always constant quarrels between the architect and contractor as to what the specifications mean or specify and as to whether certain work is, or is not, proper under the contract. The owner is necessarily drawn into the differences and the unhappiness caused can hardly be measured in financial terms. It would seem that the use of the percentage contract with a maximum limit of liability for the owner would assure the latter more nearly what he wants and what he is paying for, provided the architect gives the work the proper supervision for that kind of a contract. It should eliminate the trials and tribulations above enumerated for both the architect and owner, and in addition save the owner from the burdensome and costly completion after defaults with the inevitable lawsuits and their attendant expense and delay. It should cause the architect and contractor to vie with each other to see that the owner gets exactly what he wants instead of making them the enemies they are ordinarily. It should be noted that this form of contract increases the competition between the large corporations with heavy overhead expenses and the little contractor whose office is in his house, since the percentage paid has to cover these items in both cases. Until some more accurate determination of contract work becomes fashionable, such as the widely suggested quantity-surveying plan, there is no question but that under ordinary circumstances a properly drawn cost plus contract is the most advantageous for all concerned. The owner's special plea for economy and cheapness must be governed by the definition of "cost," by the percentage or fixed sum paid, and by a maximum liability under all contingencies.

Cost of Work. As the architect has found in his own contracts for services, there is one point that cannot be too carefully stated and understood, namely, what elements are to be considered in the "cost" upon which the percentage is based. Those specially interested in this matter from the architect's standpoint are referred to the April, 1913, issue of THE BRICKBUILDER. A case just decided covering this question involved the following facts: An architect had the usual contract for a fixed percentage based, however, on the "cost of the contracts." A contract was given for the entire work at $7,500. When the work was within three weeks of completion the owner was unable to make a payment then due the contractor. This failure of the owner, due to some difference with the loan company, gave the contractor the chance he was looking for, and he immediately declared that the owner had broken the contract and therefore he was stopping the work and would claim the value of the work done to the time of stopping. The fact was, that the contractor had known for some time that he could not complete the work for his contract price, and that if he had to continue it would cost him from $1,000 to $1,500 more than he was to receive. As the owner was in a hurry, he finally promised

to pay for the unpaid materials and labor, and pay for the necessary material and labor to complete, and also a weekly salary to the contractor to act as superintendent for the completion, limiting it to three weeks. After the house was completed, believing he had a grievance against the architect, the owner refused to pay him a balance due, which resulted in the filing of a lien and an action to foreclose the same. At the trial the owner admitted that he understood that the architect was to get his percentage on the cost of the house. It was proved that the cost, with the troubles above mentioned, was $9,000, and the court held that the architect could charge his percentage on this actual cost, and that he was not restricted to what it should have cost, or $7,500, had the contractor done as he agreed to do. This case is also important in that it shows that "cost" means what it says, irrespective of the causes for its amount.

Just lately, in a very important building case, the question as to what was a reasonable percentage was raised. The experts who were called upon to give opinions upon that matter seemed to agree fairly well that 10 per cent was fair and 15 per cent a maximum, without taking into consideration that the percentage must depend upon the basis or definition of "cost." Let us see if they were correct in their general opinion.

Ordinarily "cost" to the average person means only money spent at or near the construction work for foremen, mechanics, laborers, etc., and for materials actually incorporated in the construction or wasted in its construction. Such a person usually fails to remember that this does not include such actual costs to the contractor as official, engineering and clerical salaries in large firms or corporations, rent, etc., of spacious general offices, interest on money invested in office, plant, equipment, depreciation, etc. It has been found that these items for a big corporation doing large work vary from 5 per cent to 20 per cent of the "cost" of labor and material on the job. For this reason the ordinary 10 per cent upon such "cost" often represents little or no profit for the contractor, although the owner usually considers it all profit. What percentage might be fair under certain circumstances is well illustrated by a rather late case in the West.

The laws of a certain western state provide that the state shall pay for excavation of waterways and filling in of tide lands at cost plus 15 per cent. A state contractor for this work sublet his filling work to a subcontractor at 15 cents per cubic yard. The contractor's supervision, engineering, etc., cost him 1 cent per cubic yard, so that this basis of 16 cents was certified as the cost to which the 15 per cent was added. When the assessments were attempted to be collected, they were resisted and in the resulting lawsuit it was proven that the actual cost to the subcontractor to do the work was but 12 cents, giving them a 3-cent profit. The first court held that the cost heretofore certified should be reduced by this 3-cent profit; but the Supreme Court held that the cost was 16 cents to the contractor, and there being no proof of any fraud, he was entitled to use that as the basis for the calculation of his percentage of profit. Thus instead of paying what was supposed to be 15 per cent of cost, the failure to stipulate that there should be no subcontracting unless the subcontractor's cost should be considered the contractor's cost, caused the state to pay 38 per cent upon the "actual cost," or 53 per cent upon the "cost" as that term is ordinarily considered. Yet, as was well said in that case, there was no showing but what this was a fair charge for the state to pay for the work.

This failure to prevent subcontracting is even more strongly shown in a New York case where a contractor on a cost plus 10 per cent contract was held to be entitled to charge his 10 per cent on various subcontracts which he had given to the subcontractors at their cost plus 10 per cent. In other words, he actually collected 21 per cent on the "cost" to the subcontractor. In still another case an interesting conclusion was reached. A railroad grading contract provided that the contractor was to receive payment of wages for actual labor, payments for powder and fuses plus 10 per cent of said amounts which were to be in full for all advances, shanties, pay of foremen above ordinary labor, general supervision, clerk hire, agents, personal care, etc. Upon receiving the contract, part was sublet and the contractor charged his 10 per cent upon the subcontractors' charges to him. The court held that since there was no specification against subletting, and as "wages" might be paid either for time or piece work, hence payment made to subcontractors were "wages" for actual labor upon which he could properly charge his 10 per cent.

These are but a few of the cases which show that as a matter of fact 10 per cent upon the usual basis of "cost" is really a very small percentage, which ordinarily would give the contractor little or no real profit. These cases also show that an owner may pay from 20 per cent to even 50 per cent on the usual "cost," and yet only pay what the work is reasonably worth. In this connection the owner eliminates the extra charge which a contractor always adds to his bid to take care of unknown contingencies. As a matter of policy, it is naturally much preferable to make the defined "cost" include all possible expenses of every nature and keep the percentage down, although for purposes of giving a greater range to competitive bids it may at times be deemed otherwise.

These cases thus show that the protection of the owner depends largely upon the contract provisions regarding subletting. Of course a general contractor must be permitted to subcontract his plumbing work, since that class of work is in many cities restricted to registered and licensed plumbers. Again, a general contractor who makes a specialty of foundations and mason work should be permitted to subcontract his steel work, since he could not possibly do that character of work as cheaply as the others making that a specialty. Hence this is where the architect should be given some discretion to approve or disprove of subcontracts and their amounts, since the cost to the owner depends so largely upon such subcontracts.

The care with which the definition of "cost" must be scrutinized is well shown by a very late case in which the "cost" was fully defined, but unfortunately for the owner contained the phrase "cost of accidents." During the work an employee of the contractor's was badly hurt and recovered a judgment against them of $27,000. As this award was affirmed upon appeal the company had to pay, and they then asked the owner to reimburse them as it was part of the defined cost. The owner refused on the ground that it was not reasonable to charge him with such a judgment under the wording mentioned. However, the court ruled against him and held that the interpretation

of the phrase by the company was correct and the owner must pay.

While these suggestions and cases show that the cost plus contract has its pitfalls for the owner, yet there are really very few of serious import, and the advantages suggested are so great that there are times when it would undoubtedly be of advantage to the architect to use this form of contract.

Architect's Duties. As has been previously stated, there is practically no difference between the architect's duties under the cost plus form as differentiated from the lump sum form. This is well illustrated in a late case where the owner refused to pay a contractor because the sidewalls were not watertight and because the same condition existed in the roof and around the windows. The contract was a percentage contract and the proof showed that the contractor had carefully followed the plans and specifications of the architect, which were very detailed. The court held that as far as the contractor was concerned the owner warranted the sufficiency of the plans, and hence there was no liability against the contractor on these scores. That opinion also meant that the owner could probably recover against the architect for the insufficiency of his professional work.

Hence we can take it as our general rule that the architect has the same liabilities and duties under these forms of contract as under the lump sum contract.

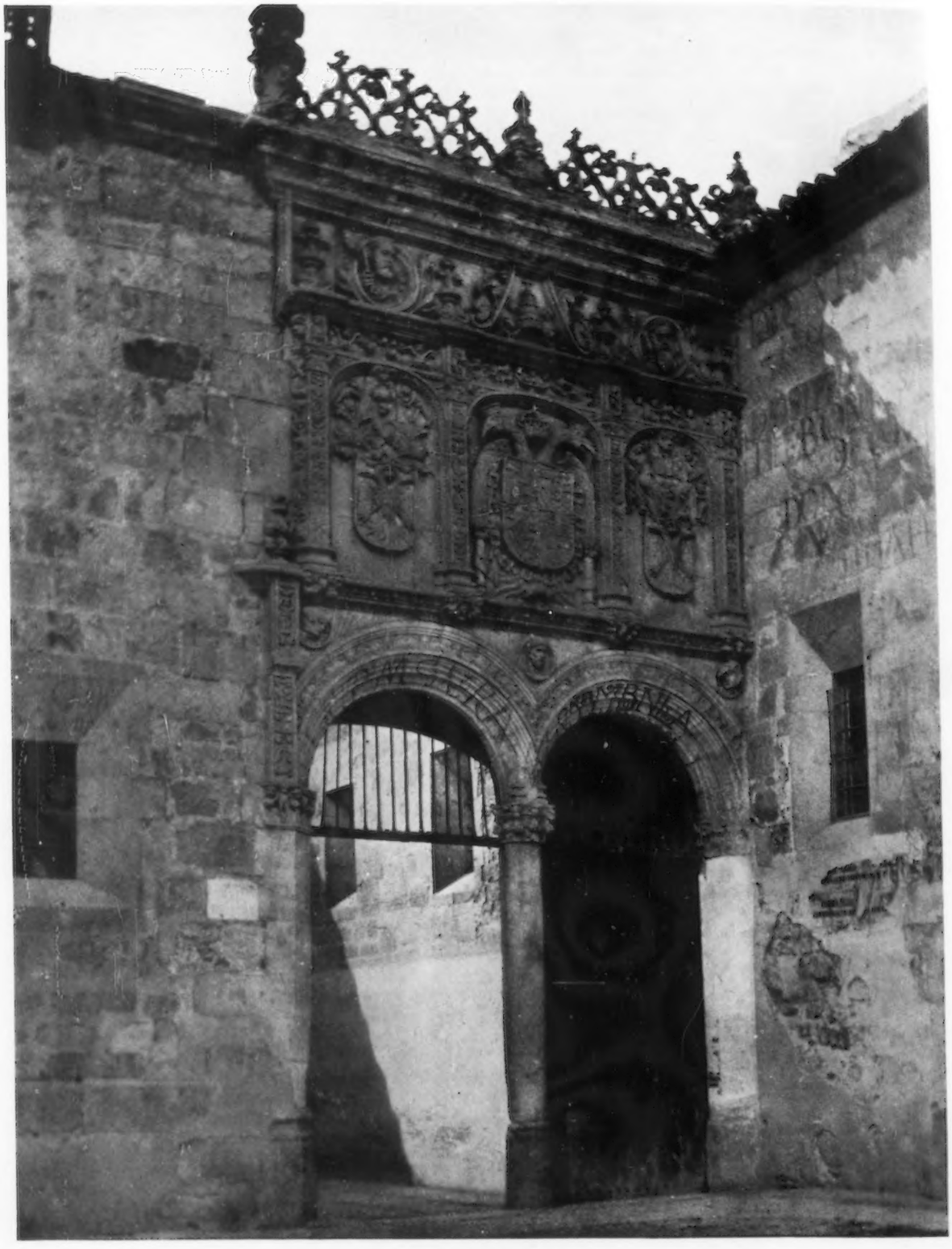
Relation of Owner and Contractor. There are times when it is essential that the architect should know whether the party doing the construction work is a so-called independent contractor or merely the agent of the owner. That question has been the subject of probably as much litigation as any other one matter, especially where questions of liability for accidents have been involved.

Clearly in our third form of cost plus contract suggested at the commencement of this article, where the owner hires a building superintendent only, the relation created would be master and servant. In such a relationship the owner becomes responsible for accidents and also for the result of the work. Some illustrations will show the differences in the relations. Where an owner made a contract with two partners to furnish teams and men for certain work, one of the partners to be always present as foreman under the direction of the owner's foreman; where the partners received pay as foremen at a certain sum per day and the men, materials, and expenses were paid for at cost and bills rendered therefore with a certain percentage added for profit, the court held that the partners were the servants of the owner. On the other hand, where a contractor enters into an agreement with the owner whereby he engages to purchase the material, employ the labor, and superintend and erect a building pursuant to plans in hand; where the contractor is to render a true account of purchases and payrolls, to use his best endeavors to secure material and labor at the lowest prices and guarantees that the workmanship shall be first class; where the owner is to pay the estimated net cost of materials and labor and a fixed sum called a commission, the court held that such a contractor was an independent contractor and hence he alone could sue a third person for the damages resulting from the negligent construction of a portion of the building under a contract made with him.

The test has been said to be, "Who has the general control of the work? Who has the right to direct what shall be done and how to do it?" Yet it has been held time and again that the right reserved to an owner to discharge any workman does not make the contractor a servant, and the same is true of the privilege of inspecting and supervising the work. It is only when the owner can and does attend to the details that the relation of master and servant is created. The mere fact that there is no contract and no plans, and that the person employed to do the work is paid by the day, does not create the relation of master and servant where the person is employed to accomplish a certain object, the mode, manner, and means being left entirely to the person's skill and judgment.

Thus we see that generally there is no more chance of the owner becoming a master and hence responsible for accidents, etc., in cost plus contracts than in the usual lump sum form. As this fear often causes the owner to refuse to use the cost plus form where it should be used, it is hoped that this may allay such suspicions and doubts.

Conclusions. Our considerations would seem to show that the cost plus contracts have advantages which some architects and owners have failed to take into account. Especially where it is used in connection with a maximum limit of cost it should give the best satisfaction to all concerned unless some means of accurate quantity surveying with a suitable contract is used, or unless the contractor or architect is dishonest. The owner may be safeguarded by the architect's careful attention to the following items: the contract definition of cost; the contract provisions regarding the percentage or fixed sum to be paid, subcontracts, maximum limit of owner's liability, and constant supervision with honest and accurate checking of all costs. If the owner were assured of the saving both in money and annoyance which is possible with this form of contract, he should be willing to pay the architect a greater compensation for his increased services, and also the additional expenses necessary for the proper checking of the contractor's figures.



DETAIL OF ENTRANCE
ESCUELAS MENORES, SALAMANCA, SPAIN

Some Old and Unfamiliar Spanish Buildings.

PART III. THE UNIVERSITY OF SALAMANCA AND THE PALACIO POLENTINOS, AVILA.

By ARTHUR G. BYNE.

Illustrated from Photographs Specially Taken by the Author.

THE "Catholic kings" (Ferdinand and Isabella) lavished much attention on Salamanca. First they built its Gothic cathedral; then, finding its celebrated university buildings too mean and unassuming for an institution which stood on a par with Bologna, Paris, and Oxford, they gave orders for its embellishment in 1480. Who were the architects who carried out this order has never been discovered.

The work proceeded little farther than the entrance to the Escuelas Moyores (the university proper), the entrance to the Escuelas Menores (the preparatory school), and the grand staircase of the university. By this time Charles V had ascended the throne, as is shown by the introduction of his German eagle. Whether this foreign-born king was too little interested in matters at home, or whether funds were not forthcoming, certain it is that the work was abandoned and the building remained, for the most part, what it had always been — little more than barracks in appearance.

The adornment ordered by the kings was carried out in the soft Salamantine sandstone, which, while very durable, is also easily worked, thus lending itself happily to the infinity of delicate *motifs* that make up Spanish Plateresque. Of the three features actually achieved, the first mentioned — the university portal — is the most renowned Plateresque example in existence, too well known to need illustrating here. The second and third, while less important, are still extremely interesting and full of character.

A first glance at the entrance to the Escuelas Menores, and one would say it had been executed in terra cotta; the same type of ornament in Italy *would* be terra cotta, and one's temptation is always to compare Spanish Plateresque with its Italian inspiration. But in Spain the style was much more decorative, much less hampered by thorough structural knowledge — the very reason why it succeeds in being distinctive. No one, in this instance, was worried by violating the accepted canon that a column should not stand in the middle of an entrance, and the result is certainly pleasing, wonderfully helped out by the three divisions above to hold the arms of Charles V. Indeed, one of the best things this foreign monarch did for Spain was to bring to it an extraordinarily decorative escutcheon. The inscription on the reveal of the arches is not a prank of students, but very carefully studied lettering, beautifully painted in dark red, and adds much to the general effect. One sees a great deal of it in Spain.

The staircase illustrated leads from a corner of the patio to the grand gallery above. It shows that association of highly concentrated ornamentation with severely plain walls, so characteristic of Spanish architecture, the walls, in happier days, having been hung with tapestries.

Spain was slow to relinquish its Gothic balustrades. Even long after other Renaissance forms had been accepted, the spindle baluster had not yet banished the more solid Gothic ramp, although, as in this case, Gothic was accompanied by mouldings and relief in the new style.

The theme of the carving is a fifteenth century bull fight quaintly conventionalized. The knights and ladies depicted are very Gothic; but this is offset by frequent use of the classic acanthus. Nowhere were the familiar scenes of everyday life so deftly and so constantly converted into ornament as in Spain. There are seventy-five feet of this particular relief (for the staircase is carved on both sides), and each episode of the national sport is more charmingly wrought than the last. When it comes to the turn, the place most difficult to handle any balustrade and newel, this unknown Salamanca architect has managed admirably by introducing a corner post, that hardly seems to interrupt the continuous band of relief.

Such a staircase carved to-day in stone would cost a prodigious figure; but it might be successfully worked out in terra cotta in combination with rough plaster walls.

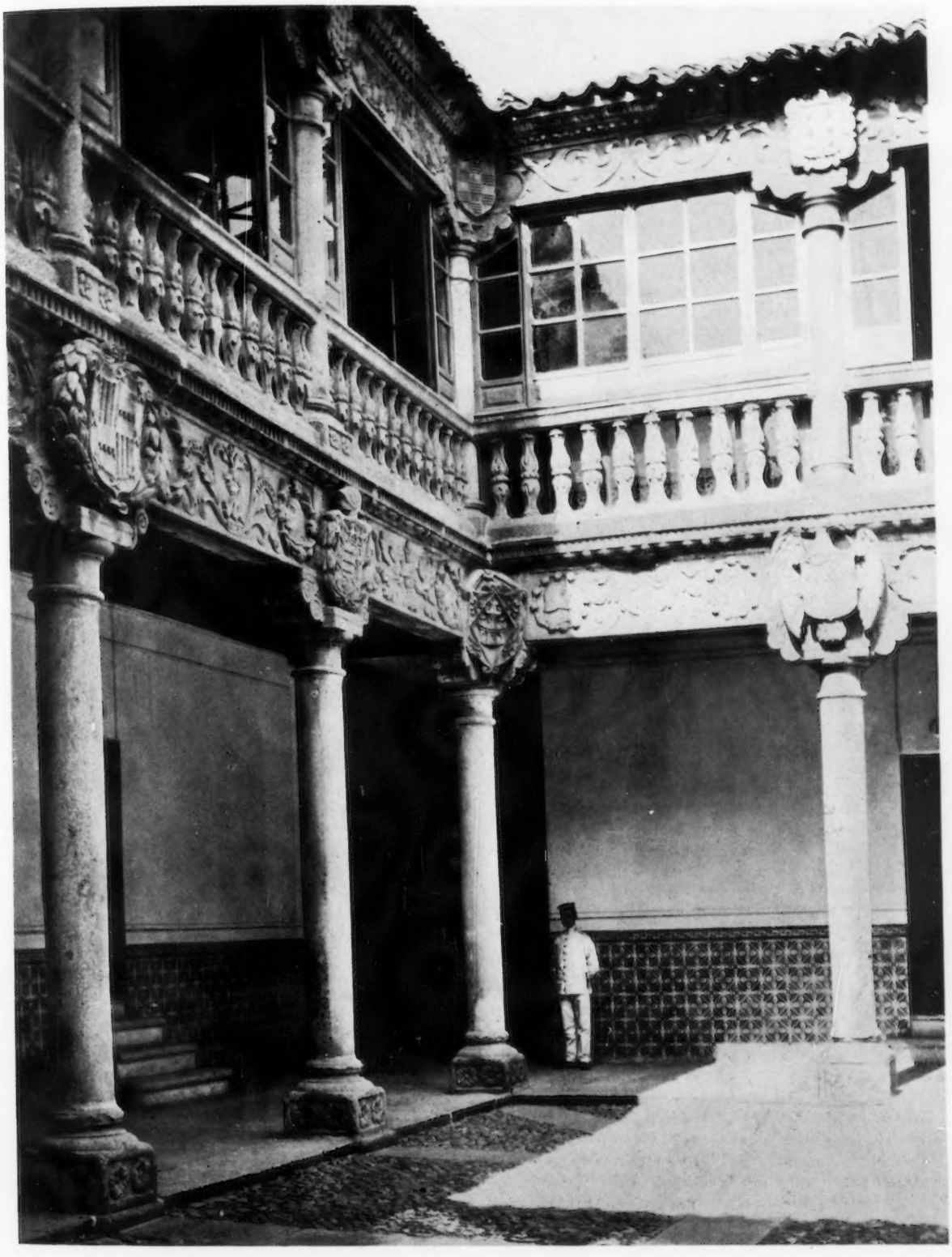
This portal and the more celebrated one to the university proper open on to a charming little plaza. A statue of the great poet and professor, Fray Luis de León, stands here; and the surrounding walls — beautifully carved stone of gorgeous color, the stone that has caused the whole city to be known as Golden Salamanca — make the plaza and, indeed, the entire university precincts, a highly poetic spot.

Palacio Polentinos, Avila. Certainly the Spanish were but little influenced in their architecture by the material at hand. The city of Avila is cut from solid granite; and despite the density and hardness of this stone the carver never hesitated at either the abundance or intricacy of ornament favored in other provinces where the material was more amenable. What he produced, naturally, never arrived at delicacy; yet neither is it coarse and without feeling, but is instead wholly unique in quality.

Here, again, we see the typical patio column with stone brackets inspired by Moorish wooden ones; while farther Moorish flavor is imparted by the tiled wainscoting. The construction of this patio illustrates the illimitable confidence placed in stone by old builders, no weight being too great to rest on slender columns.

The Polentinos palace probably dates from the end of the sixteenth century. It is now used as a government military school.

DETAIL OF GRAND STAIRCASE
UNIVERSITY OF SALAMANCA, SALAMANCA, SPAIN



DETAIL OF PATIO
PALACIO POLENTINOS, AVILA, SPAIN

EDITORIAL COMMENT AND NOTES FOR THE MONTH

SINCE the publication of our editorial in regard to the imminent danger to works of architecture during the war in Europe, events have proved that these dire expectations have been more than realized, and that monuments which have survived the wars of centuries have succumbed to modern high explosives and to the punitive measures of a military autocrat. Making all allowances for the exaggerations of rumor, the destruction which has already occurred and has been acknowledged is irreparable, unjustifiable, and unnecessary. The Town Hall at Louvain, which was at first reported destroyed, has apparently been respected: but the Church of St. Pierre and the Library have been wantonly burned after any belligerents their walls may have harbored had been driven out. It seems a poor exemplification of the principles of intellectual advance that 150,000 volumes, which were open to the scholars of the world, should be destroyed to punish a local community who were probably mad with rage.

Church towers are apparently being used as targets, — repeated statements being made that range has been established by firing at the towers, — a convenient but unnecessary method. In many cases the deliberate jeopardizing of these towers by the defenders is quite as culpable as their attack by the invaders, but seems to have been considered essential in combating dirigibles and aeroplanes. That church towers, because of their elevation, should be made points of observation, is natural; but that they should be converted into platforms for machine guns, and thus deliberately draw the enemies' fire, seems an expedient which could be neglected. It is rumored that the fine tower of Senlis, used as a base from which to fire upon air craft, has been bombarded, fortunately with little disastrous result. The district through which the Germans have been forcing their masses to turn the allies' left flank is one full of the incomparable French Gothic of the thirteenth century. Soissons, Senlis, Noyons, Rheims, Amiens, Beauvais, have great architectural monuments which should be respected. Rumor again states that bombs dropped from dirigibles in most cases are falling near the cathedrals and churches, as they are conspicuous marks. Up to the present time bomb throwing appears to be effective for purposes of terrorizing non-combatants and doing malicious mischief. It has been inaccurate and ignorantly served. The Hague Tribunal wished to control its action, but the principal powers declined to assent. And, therefore, the cumulative efforts of genius and labor — the highest visual expression of the aspirations and beliefs of mankind, which if even slightly marred by individual vandalism are considered outraged thereby — are now subject to mutilation and demolition and are giving mute testimony of the brutality of war. Because these are shining marks, therefore are they attacked, regardless of the fact that they are the world's assets — not merely local monuments. Protests are being made, not only by neutral nations, but by bodies of artists and by civic officials — appeals that in the bombardment of towns certain areas shall be immune from attack and that no belligerents shall be quartered within those areas.

There has even been a rumor that if Paris were besieged, it should be surrendered rather than that its monuments should be destroyed by bombardment. Despite such self-abnegation as this would indicate, there seems to be no protection from the overhead attacks of the aircraft in the hands of men who have shown no regard for persons or things other than the desire to destroy. Here seems to lie the chief danger to the accumulated achievements of man.

Imagine the results of a dirigible attack made in the enshrouding, overlying fog of a November day in London. Bombs with a radius of absolute destruction — not mere demolition — of from two hundred to three hundred feet, falling promiscuously, not with the intention of hitting definite marks. In the district of Westminster alone the Abbey, the Parliament Houses, White Hall, the National Gallery and its priceless collections, are among a few of the buildings which could not fail to suffer, even by the accidental fall of these explosives, and for what purpose? Almost entirely that of wanton destruction. The persons killed would be few and non-combatants. No munitions of war would be affected. The blow to the efficiency of the nation would be negligible, and the burning rage for reprisal and vengeance would only increase the world's loss.

It is one of the axioms of war that efforts should be directed where they will have the greatest effect in crippling the opponent. The destruction of the great buildings and collections of the world cripples none of the sinews of war. War has served as the subject of art, music, literature, and science. The portrayal of emotions and the knowledge fearfully obtained by the opportunities of the hospital are amongst the few glories which war can claim, and it seems an imbecile return for the recognition of war by the arts to destroy these records of the patriotism of the past.

AS the world grows older and the ages recede, the richer, the more precious, the more fragile become the ancient heirlooms of humanity. They constitute the final symbols of human glory; they cannot be too carefully guarded, too highly valued. But all the other dangers that threaten their integrity and safety, if put together, do not equal war. * * *

A nation's art products and its scientific activities are not mere national property; they are international possessions, for the joy and service of the whole world. The nations hold them in trust for humanity. The international force which will inspire respect for that truth it is our business to create. — *Havelock Ellis*, in the *Boston Herald*.